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APR 77 J F ROSE, R G POWELL

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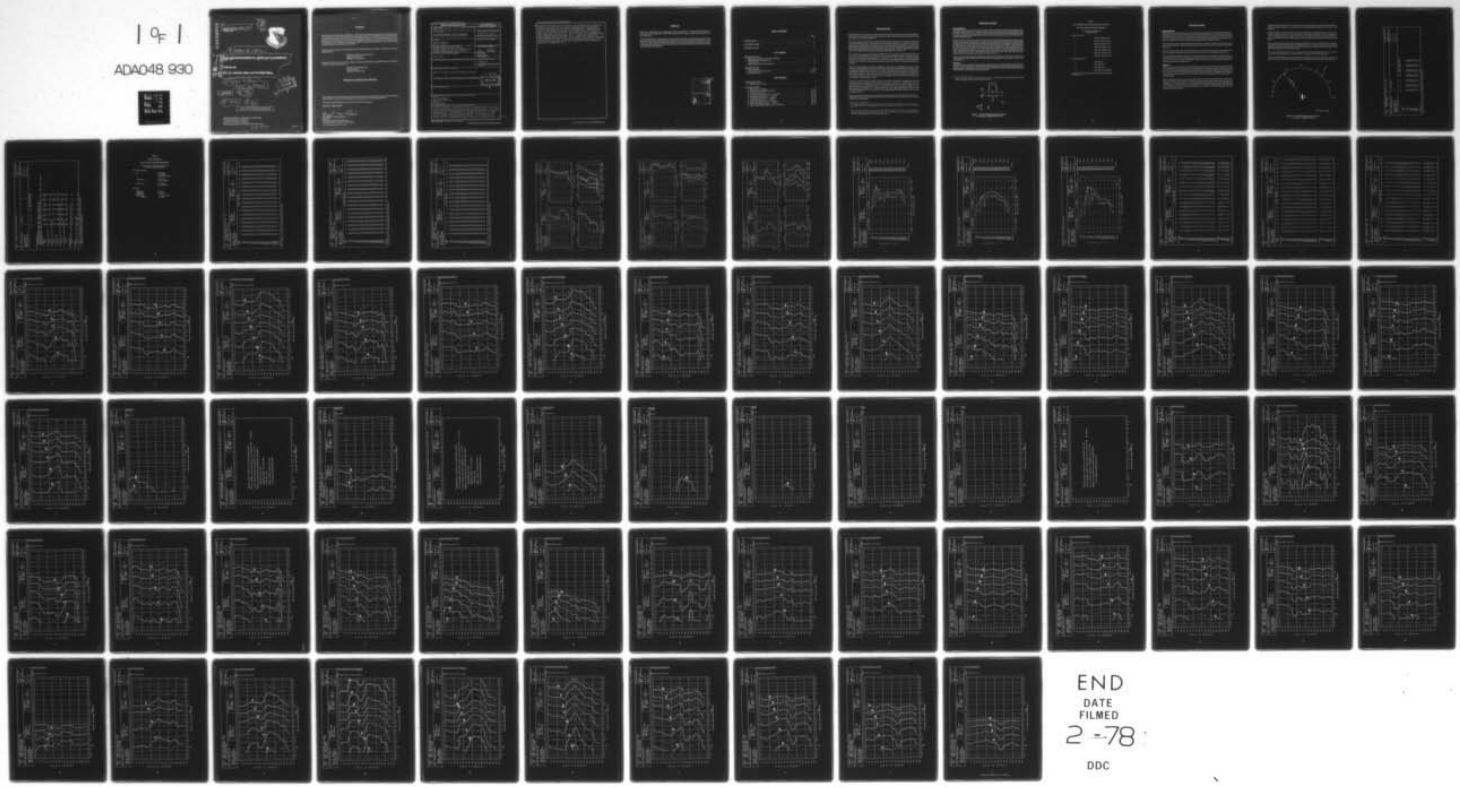

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# USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

## Volume 85

## OV-10A Aircraft, Near and Far-Field Noise

Justus F. Rose
Robert G. Powell

APRIL 1977

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AEROSPACE MEDICAL RESEARCH LABORATORY
AEROSPACE MEDICAL DIVISION
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FOR THE COMMANDER

HENNING E. VON GIERKE
Director
Biodynamics and Bionics Division
Aerospace Medical Research Laboratory

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The USAF OV-10A is a forward air control or observation/strike reconnaissance aircraft powered by one each T76-G-10,-12 turboprop engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for three engine/power conditions. Near-field data are reported for 7 locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech

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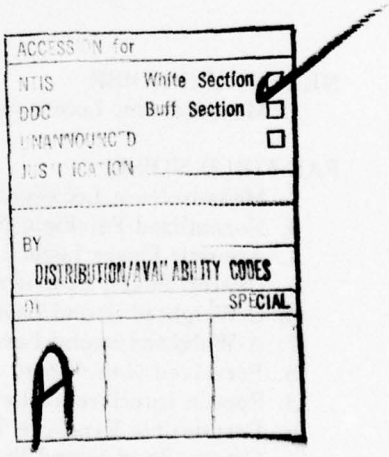
interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

## PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The authors gratefully acknowledge Mr. John Cole for his assistance in preparing this report, Lt. Col Donald Gasaway of the USAFSAM/NGEA, Brooks AFB, TX for providing near-field data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechanics of data processing, and Ms. Norma Peachey and Mr. Mike Patterson for assistance in typing and preparation of the graphics.



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# INTRODUCTION

The USAF OV-10A is a forward air control or observation/strike reconnaissance aircraft powered by one each T76-G-10, 12 turboprop engines. The aircraft was manufactured by North American Rockwell and the engines by the Garrett Corporation.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the OV-10A aircraft. The measured data presented in this volume were acquired by the Aerospace Medical Research Laboratory (AMRL), Wright-Patterson AFB, OH, and the USAF School of Aerospace Medicine (USAFSAM), Brooks AFB, TX.

This volume is one of a series published by the AMRL under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations an in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type, noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discussed the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (reference 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published an is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1) Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

## NEAR-FIELD NOISE

### MEASUREMENTS

USAFSAM acquired near-field noise data on the OV-10A aircraft during ground runup operations of its turboprop engines (Reference 3). For these tests the aircraft was at Eglin Air Force Base, Hurlburt Field, FL. Table 1 lists the four engine-power conditions and near-field locations. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. During this test he recorded a 15-20 second noise sample on magnetic tape at each location. During analysis of each sample, he determined the octave band root-mean-square sound pressure levels. Figure 1 shows the seven near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult in the near-field since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A ground crew location 1 and test condition A.

### RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the OV-10A aircraft at the seven ground crew locations. This table includes the overall and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise or personnel and their performance.

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3. Gasaway, Donald C., *Noise Associated With Operation of Air Force OV-10A Aircraft*, SAM-TR-70-51, USAF School of Aerospace Medicine, Brooks AFB, Texas, 1970.

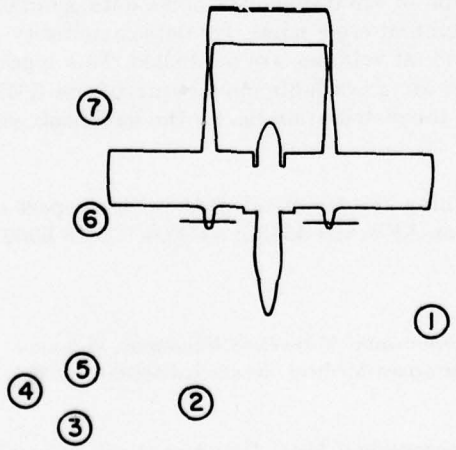



**Figure 1. Near-Field Measurement Locations on a Taxiway at Hurlburt Field, FL**

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS

FOR NEAR-FIELD NOISE MEASUREMENTS

OV-10A Aircraft, Ground Runups
Hurlburt Field, FL

*Ground Crew Location**

| | |
|---|---|
| 1 | Left Side, 60 degrees at 22 ft. |
| 2 | Right Side, 20 degrees at 18 ft. |
| 3 | Right Side, 45 degrees at 32 ft. |
| 4 | Right Side, 60 degrees at 35 ft. |
| 5 | Right Side, 60 degrees at 23 ft. |
| 6 | Right Side, 90 degrees at 22 ft. |
| 7 | Right Side, 135 degrees at 26 ft. |

*Aircraft Engine Operation*

| | |
|---|---|
| A | Left Engine Idle |
| B | Both Engines Idle |
| C | Both Engines Taxi |
| D | Both Engines Taxi, High RPM |

*Locations are relative to the intersection of the aircraft's centerline and the propellers' plane.

## FAR-FIELD NOISE

### MEASUREMENTS

AMRL acquired all far-field data during a 1-hour period, thus keeping similar meteorological conditions throughout the test. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and 19 microphone measurement sites on each of two semicircles. The center of the 76 meter radius semicircle used in surveying the T76-G-10, 12 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through both engines' propeller planes.

Table 4 provides cockpit readouts of engine characteristics (% RPM and torque) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All 19 microphone measurement sites are in the acoustic far-field of their respective source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape recorder system was used to sequentially record 5 to 10 seconds of noise at each far-field location. The microphone was hand-held 1.7 meters (5-1/2 feet) above the ground and pointed at the source (0° angle of incidence). These samples were then time-integrated to derive a root-mean-square sound pressure level.

### RESULTS

Table 5 lists the overall and 1/3 octave band SPLmeasured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 200 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the OV-10A aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power levels and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of the noise characteristics for intermediate power settings (e.g., 80% RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables. No data are presented at the 180-degree location for the idle and military power settings because of turbulent air flow behind the aircraft. Typically, the A-weighted level for that angle is 5 to 10 dBA below the level at the 170 degree location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating.

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

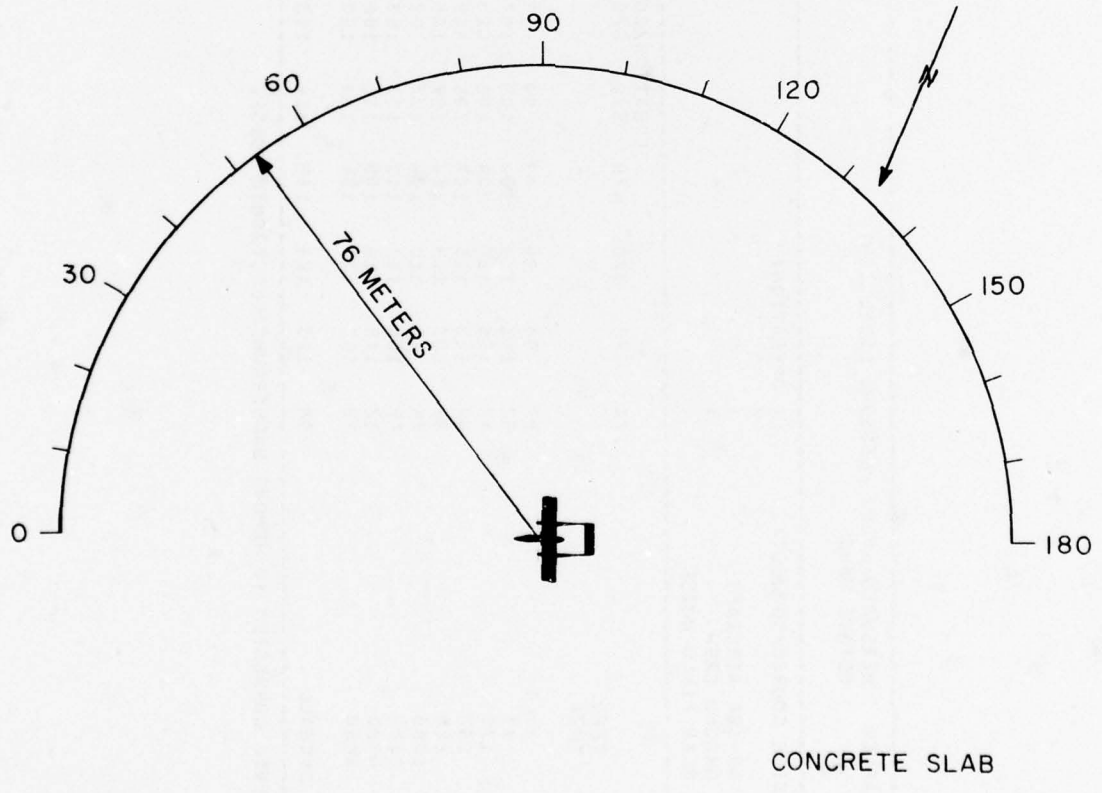



**Figure 2. Far-Field Measurement Locations on a Taxiway at Eglin AFB, FL**

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB) OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 69-006-500
RUN 01
26 JUL 76
PAGE F1

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
GROUND CREW
NEAR FIELD NOISE

OPERATION:

| FREQ (HZ) | LOCATION/CONDITION 1/A | 2/B | 3/C | 4/D | 5/B | 6/B | 7/B |
|---|---|---|---|---|---|---|---|
| 31.5 | 83 | 90 | 99 | 93 | 89 | 93 | 87 |
| 63 | 92 | 103 | 113 | 104 | 105 | 107 | 96 |
| 125 | 87 | 101 | 114 | 104 | 102 | 103 | 100 |
| 250 | 92 | 103 | 115 | 107 | 106 | 105 | 101 |
| 500 | 93 | 103 | 119 | 110 | 107 | 105 | 99 |
| 1000 | 84 | 98 | 110 | 104 | 107 | 97 | 96 |
| 2000 | 79 | 104 | 107 | 110 | 103 | 103 | 94 |
| 4000 | 82 | 110 | 110 | 105 | 101 | 106 | 93 |
| 8000 | 79 | 102 | 113 | 106 | 103 | 100 | 88 |
| OVERALL | 98 | 113 | 123 | 116 | 114 | 113 | 106 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 3 MEASURES OF HUMAN NOISE EXPOSURE

IDENTIFICATION:
OMEGA 3.2
TEST 69-006-500
RUN 01
26 JUL 76
PAGE H1

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
GROUND CREW
NEAR FIELD NOISE

OPERATION:

| | LOCATION/CONDITION | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1/A | 2/B | 3/C | 4/D | 5/B | 6/B | 7/B |
| **HAZARD/PROTECTION** | | | | | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR | | | | | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR | | | | | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | | | | | | | |
| NO PROTECTION | | | | | | | |
| OASLC | 98 | 113 | 123 | 116 | 113 | 113 | 106 |
| OASLA | 93 | 113 | 119 | 115 | 111 | 110 | 102 |
| T | 101 | 3.2 | P | 2.2 | 4.5 | 5 | 21 |
| MINIMUM QPL EAR MUFFS | | | | | | | |
| OASLA* | 74 | 87 | 99 | 91 | 89 | 88 | 83 |
| T | 960 | 285 | 36 | 143 | 202 | 240 | 571 |
| AMERICAN OPTICAL 1700 EAR MUFFS | | | | | | | |
| OASLA* | 70 | 83 | 95 | 86 | 84 | 84 | 78 |
| T | 960 | 571 | 71 | 339 | 480 | 480 | 960 |
| V-51R EAR PLUGS | | | | | | | |
| OASLA* | 70 | 85 | 96 | 88 | 87 | 84 | 78 |
| T | 960 | 404 | 60 | 240 | 285 | 480 | 960 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | | | | | | | |
| OASLA* | 55 | 68 | 81 | 73 | 73 | 69 | 64 |
| T | 960 | 960 | 960 | 960 | 960 | 960 | 960 |
| H-133 GROUND COMMUNICATION UNIT | | | | | | | |
| OASLA* | 64 | 82 | 89 | 85 | 83 | 81 | 74 |
| T | 960 | 679 | 202 | 404 | 571 | 807 | 960 |
| **COMMUNICATION** | | | | | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | | | | | |
| PSIL | 85 | 102 | 112 | 108 | 106 | 102 | 96 |
| **ANNOYANCE** | | | | | | | |
| PERCEIVED NOISE LEVEL (PNL IN PNDB) | | | | | | | |
| PNL | 105 | 128 | 133 | 128 | 124 | 125 | 116 |

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

## TABLE 4

## TEST CONDITIONS

## FOR FAR-FIELD NOISE MEASUREMENTS

OV-10A Aircraft, Ground Runups, Eglin AFB, FL
10 February 1969 Tail # 6613553,

*Aircraft Engine Operation*

| | |
|---|---|
| Idle | Both Engines<br>70 % RPM<br>600 foot pounds torque |
| Locked Props | 89 % RPM<br>< 600 ft. lb torque |
| Military Power | 101 % RPM<br>1900 ft. lb torque |

*Meteorology*

| | |
|---|---|
| Temperature | 11.8 C |
| Bar Pressure | 0.769 M Hg |
| Rel Humidity | 48 % |
| Wind — Speed | 2.1 M/Sec (4 Kts) |
| — Direction | 060 Deg |

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 76 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 64 | 62 | 60 | 58 | 61 | 60 | 62 | 62 | 61 | 58 | 60 | 62 | 59 | 62 | 65 | 63 | 62 | 63 | |
| 31.5 | 65 | 64 | 65 | 60 | 59 | 60 | 60 | 59 | 63 | 62 | 61 | 60 | 61 | 60 | 62 | 63 | 63 | 63 | |
| 40 | 68 | 68 | 69 | 63 | 62 | 62 | 63 | 65 | 69 | 68 | 65 | 62 | 65 | 65 | 66 | 66 | 68 | 65 | |
| 50 | 71 | 68 | 65 | 64 | 62 | 62 | 62 | 65 | 68 | 69 | 67 | 68 | 66 | 67 | 66 | 65 | 67 | 66 | |
| 63 | 83 | 81 | 82 | 83 | 78 | 83 | 77 | 77 | 87 | 90 | 90 | 91 | 89 | 90 | 82 | 85 | 77 | 74 | |
| 80 | 81 | 79 | 79 | 80 | 75 | 80 | 75 | 75 | 84 | 88 | 88 | 90 | 88 | 88 | 81 | 84 | 75 | 73 | |
| 100 | 66 | 65 | 65 | 66 | 66 | 66 | 67 | 68 | 71 | 71 | 70 | 72 | 71 | 70 | 70 | 69 | 69 | 66 | |
| 125 | 72 | 76 | 74 | 75 | 70 | 69 | 71 | 74 | 76 | 75 | 77 | 74 | 75 | 73 | 75 | 72 | 68 | 64 | |
| 160 | 73 | 75 | 73 | 74 | 71 | 72 | 73 | 74 | 76 | 76 | 77 | 76 | 77 | 76 | 75 | 74 | 71 | 66 | |
| 200 | 76 | 74 | 77 | 76 | 70 | 69 | 72 | 70 | 71 | 70 | 72 | 75 | 72 | 73 | 71 | 74 | 69 | 65 | |
| 250 | 71 | 71 | 72 | 72 | 70 | 68 | 67 | 67 | 69 | 66 | 68 | 71 | 71 | 72 | 72 | 72 | 66 | 59 | |
| 315 | 81 | 82 | 81 | 79 | 76 | 72 | 73 | 73 | 73 | 71 | 69 | 75 | 81 | 83 | 83 | 82 | 73 | 65 | |
| 400 | 78 | 79 | 78 | 74 | 75 | 73 | 73 | 74 | 74 | 71 | 71 | 74 | 75 | 78 | 78 | 78 | 69 | 64 | |
| 500 | 80 | 80 | 78 | 77 | 78 | 80 | 79 | 80 | 78 | 78 | 79 | 80 | 77 | 74 | 77 | 76 | 69 | 65 | |
| 630 | 78 | 80 | 79 | 77 | 75 | 74 | 72 | 73 | 72 | 74 | 74 | 74 | 74 | 75 | 76 | 76 | 66 | 63 | |
| 800 | 78 | 78 | 79 | 76 | 77 | 75 | 72 | 73 | 72 | 72 | 75 | 77 | 74 | 74 | 71 | 76 | 66 | 63 | |
| 1000 | 78 | 80 | 79 | 77 | 77 | 76 | 73 | 74 | 72 | 72 | 72 | 73 | 74 | 74 | 73 | 77 | 68 | 63 | |
| 1250 | 79 | 80 | 79 | 77 | 77 | 76 | 71 | 75 | 71 | 71 | 74 | 75 | 72 | 73 | 72 | 77 | 68 | 62 | |
| 1600 | 81 | 80 | 79 | 78 | 77 | 78 | 72 | 75 | 72 | 71 | 69 | 72 | 72 | 73 | 71 | 74 | 67 | 61 | |
| 2000 | 83 | 83 | 82 | 79 | 79 | 80 | 75 | 76 | 73 | 71 | 69 | 72 | 71 | 71 | 70 | 72 | 65 | 59 | |
| 2500 | 85 | 86 | 84 | 82 | 82 | 83 | 78 | 79 | 75 | 71 | 69 | 71 | 69 | 69 | 69 | 69 | 64 | 57 | |
| 3150 | 84 | 87 | 84 | 83 | 84 | 84 | 79 | 79 | 76 | 72 | 69 | 71 | 69 | 69 | 68 | 69 | 63 | 56 | |
| 4000 | 84 | 88 | 84 | 82 | 84 | 85 | 80 | 80 | 77 | 75 | 70 | 72 | 70 | 70 | 68 | 69 | 63 | 56 | |
| 5000 | 77 | 83 | 82 | 82 | 80 | 80 | 76 | 76 | 71 | 71 | 66 | 68 | 65 | 66 | 64 | 64 | 58 | 52 | |
| 6300 | 73 | 76 | 77 | 76 | 72 | 70 | 68 | 67 | 62 | 64 | 59 | 62 | 60 | 61 | 58 | 58 | 52 | 46 | |
| 8000 | 76 | 79 | 79 | 73 | 72 | 68 | 70 | 68 | 64 | 65 | 57 | 59 | 58 | 58 | 56 | 55 | 49 | 44 | |
| 10000 | 67 | 70 | 70 | 69 | 65 | 62 | 62 | 60 | 60 | 59 | 55 | 57 | 57 | 57 | 54 | 53 | 47 | 41 | |
| OVERALL | 93 | 95 | 93 | 92 | 91 | 92 | 88 | 89 | 91 | 93 | 93 | 94 | 93 | 93 | 89 | 91 | 83 | 79 | |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 76 METERS

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 2

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 61 | 61 | 61 | 62 | 62 | 63 | 63 | 60 | 61 | 56 | 59 | 60 | 61 | 59 | 64 | 59 | 61 | 62 | 68 |
| 31.5 | 66 | 65 | 69 | 70 | 71 | 69 | 71 | 67 | 69 | 64 | 66 | 67 | 68 | 69 | 68 | 67 | 63 | 64 | 69 |
| 40 | 66 | 67 | 67 | 70 | 67 | 68 | 68 | 68 | 66 | 61 | 61 | 63 | 76 | 65 | 64 | 62 | 63 | 64 | 69 |
| 50 | 69 | 65 | 62 | 65 | 63 | 63 | 64 | 63 | 63 | 61 | 63 | 68 | 73 | 70 | 64 | 63 | 63 | 64 | 68 |
| 63 | 70 | 68 | 67 | 67 | 66 | 70 | 68 | 68 | 69 | 66 | 68 | 71 | 80 | 70 | 67 | 67 | 67 | 67 | 69 |
| 80 | 81 | 83 | 82 | 83 | 83 | 83 | 84 | 85 | 85 | 84 | 82 | 80 | 78 | 77 | 80 | 80 | 80 | 80 | 79 |
| 100 | 81 | 82 | 81 | 83 | 84 | 84 | 86 | 87 | 87 | 88 | 86 | 82 | 79 | 80 | 82 | 83 | 82 | 82 | 80 |
| 125 | 71 | 72 | 71 | 71 | 71 | 70 | 70 | 71 | 70 | 70 | 71 | 72 | 78 | 78 | 74 | 72 | 72 | 71 | 71 |
| 160 | 87 | 87 | 85 | 85 | 85 | 81 | 82 | 84 | 85 | 86 | 84 | 83 | 82 | 83 | 83 | 81 | 82 | 84 | 82 |
| 200 | 84 | 83 | 83 | 83 | 83 | 80 | 82 | 85 | 86 | 88 | 87 | 87 | 84 | 84 | 83 | 81 | 80 | 81 | 80 |
| 250 | 88 | 88 | 86 | 86 | 85 | 85 | 84 | 82 | 84 | 83 | 85 | 82 | 81 | 83 | 85 | 86 | 86 | 84 | 84 |
| 315 | 89 | 88 | 88 | 87 | 88 | 84 | 83 | 84 | 83 | 81 | 79 | 80 | 82 | 85 | 86 | 87 | 85 | 84 | 84 |
| 400 | 88 | 89 | 86 | 87 | 88 | 84 | 84 | 85 | 86 | 85 | 83 | 83 | 83 | 85 | 88 | 89 | 86 | 85 | 84 |
| 500 | 88 | 89 | 88 | 88 | 88 | 83 | 83 | 82 | 82 | 84 | 83 | 84 | 85 | 85 | 88 | 89 | 85 | 85 | 83 |
| 630 | 88 | 89 | 89 | 89 | 89 | 86 | 85 | 85 | 84 | 85 | 87 | 87 | 87 | 86 | 87 | 89 | 85 | 85 | 85 |
| 800 | 87 | 88 | 87 | 87 | 87 | 83 | 82 | 82 | 81 | 83 | 84 | 87 | 87 | 84 | 87 | 87 | 83 | 83 | 81 |
| 1000 | 87 | 88 | 87 | 87 | 87 | 82 | 82 | 84 | 82 | 83 | 83 | 84 | 86 | 83 | 85 | 85 | 84 | 83 | 82 |
| 1250 | 86 | 88 | 87 | 86 | 86 | 80 | 80 | 82 | 79 | 78 | 79 | 80 | 85 | 83 | 84 | 84 | 84 | 84 | 82 |
| 1600 | 85 | 86 | 85 | 84 | 84 | 77 | 79 | 80 | 77 | 77 | 78 | 81 | 81 | 83 | 82 | 81 | 82 | 82 | 81 |
| 2000 | 85 | 86 | 85 | 84 | 83 | 78 | 78 | 81 | 78 | 78 | 79 | 80 | 80 | 79 | 79 | 79 | 79 | 79 | 79 |
| 2500 | 83 | 83 | 83 | 83 | 82 | 76 | 78 | 79 | 77 | 80 | 78 | 80 | 80 | 77 | 77 | 77 | 78 | 78 | 78 |
| 3150 | 81 | 81 | 82 | 81 | 80 | 73 | 76 | 77 | 77 | 79 | 77 | 79 | 80 | 76 | 77 | 77 | 78 | 78 | 77 |
| 4000 | 80 | 80 | 80 | 80 | 78 | 73 | 74 | 77 | 75 | 78 | 75 | 77 | 78 | 74 | 74 | 75 | 76 | 75 | 76 |
| 5000 | 74 | 74 | 74 | 74 | 73 | 67 | 67 | 71 | 70 | 72 | 71 | 71 | 72 | 69 | 69 | 69 | 69 | 70 | 70 |
| 6300 | 68 | 67 | 69 | 68 | 68 | 62 | 62 | 65 | 63 | 67 | 67 | 66 | 68 | 64 | 64 | 64 | 64 | 65 | 65 |
| 8000 | 63 | 63 | 67 | 65 | 62 | 56 | 58 | 61 | 58 | 61 | 63 | 61 | 62 | 60 | 60 | 59 | 60 | 60 | 60 |
| 10000 | 67 | 73 | 74 | 72 | 68 | 58 | 62 | 63 | 59 | 59 | 61 | 61 | 61 | 58 | 58 | 58 | 57 | 57 | 56 |
| OVERALL | 98 | 99 | 98 | 98 | 98 | 94 | 95 | 95 | 95 | 96 | 95 | 95 | 96 | 95 | 97 | 97 | 95 | 95 | 94 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 76 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 62 | 62 | 63 | 63 | 63 | 64 | 66 | 69 | 67 | 69 | 70 | 66 | 68 | 68 | 72 | 67 | 66 | 65 | |
| 31.5 | 71 | 70 | 71 | 69 | 71 | 68 | 70 | 72 | 75 | 76 | 74 | 75 | 73 | 73 | 72 | 72 | 70 | 72 | |
| 40 | 68 | 67 | 69 | 69 | 69 | 69 | 71 | 72 | 72 | 73 | 72 | 72 | 72 | 72 | 72 | 72 | 71 | 70 | |
| 50 | 69 | 69 | 70 | 70 | 70 | 70 | 74 | 75 | 75 | 74 | 73 | 74 | 73 | 73 | 73 | 73 | 72 | 70 | |
| 63 | 75 | 75 | 75 | 75 | 76 | 76 | 77 | 76 | 76 | 76 | 79 | 78 | 78 | 77 | 78 | 77 | 76 | 76 | |
| 80 | 78 | 78 | 78 | 80 | 84 | 84 | 83 | 80 | 81 | 88 | 91 | 91 | 90 | 89 | 86 | 86 | 81 | 78 | |
| 100 | 94 | 96 | 95 | 99 | 103 | 103 | 102 | 99 | 101 | 109 | 111 | 110 | 109 | 109 | 105 | 105 | 99 | 96 | |
| 125 | 79 | 79 | 79 | 80 | 84 | 84 | 83 | 80 | 81 | 90 | 90 | 89 | 89 | 89 | 85 | 85 | 81 | 77 | |
| 160 | 83 | 83 | 82 | 79 | 80 | 80 | 80 | 79 | 80 | 84 | 88 | 87 | 88 | 85 | 80 | 80 | 79 | 75 | |
| 200 | 90 | 87 | 90 | 87 | 87 | 97 | 98 | 97 | 100 | 106 | 108 | 108 | 108 | 105 | 96 | 90 | 91 | 90 | |
| 250 | 83 | 84 | 82 | 83 | 83 | 84 | 84 | 86 | 89 | 92 | 93 | 92 | 91 | 88 | 84 | 83 | 80 | 77 | |
| 315 | 90 | 90 | 88 | 90 | 88 | 94 | 94 | 98 | 101 | 104 | 103 | 101 | 96 | 89 | 89 | 88 | 88 | 84 | |
| 400 | 87 | 86 | 86 | 85 | 85 | 86 | 91 | 94 | 95 | 100 | 99 | 96 | 93 | 91 | 89 | 85 | 80 | 81 | |
| 500 | 87 | 87 | 87 | 87 | 88 | 84 | 86 | 93 | 96 | 99 | 95 | 90 | 85 | 86 | 86 | 84 | 81 | 79 | |
| 630 | 89 | 86 | 87 | 86 | 86 | 85 | 85 | 90 | 91 | 97 | 92 | 86 | 85 | 83 | 85 | 83 | 78 | 75 | |
| 800 | 89 | 87 | 88 | 86 | 85 | 84 | 84 | 87 | 88 | 92 | 86 | 83 | 83 | 82 | 85 | 83 | 80 | 76 | |
| 1000 | 89 | 87 | 87 | 86 | 86 | 85 | 84 | 86 | 87 | 89 | 84 | 81 | 85 | 83 | 86 | 85 | 81 | 76 | |
| 1250 | 87 | 86 | 85 | 85 | 86 | 86 | 87 | 86 | 87 | 88 | 84 | 80 | 83 | 82 | 85 | 84 | 81 | 76 | |
| 1600 | 85 | 84 | 83 | 84 | 84 | 85 | 87 | 87 | 88 | 87 | 84 | 79 | 84 | 83 | 85 | 85 | 82 | 76 | |
| 2000 | 85 | 84 | 84 | 85 | 86 | 87 | 89 | 90 | 90 | 89 | 83 | 80 | 84 | 84 | 85 | 84 | 83 | 77 | |
| 2500 | 82 | 83 | 83 | 84 | 85 | 86 | 88 | 88 | 89 | 87 | 83 | 78 | 83 | 83 | 84 | 84 | 83 | 77 | |
| 3150 | 84 | 85 | 84 | 85 | 85 | 85 | 87 | 88 | 88 | 86 | 82 | 78 | 83 | 83 | 84 | 84 | 84 | 79 | |
| 4000 | 84 | 85 | 84 | 85 | 86 | 85 | 87 | 87 | 86 | 84 | 83 | 78 | 82 | 83 | 84 | 84 | 84 | 79 | |
| 5000 | 80 | 80 | 80 | 81 | 82 | 82 | 83 | 81 | 81 | 80 | 77 | 73 | 78 | 78 | 79 | 80 | 79 | 76 | |
| 6300 | 74 | 75 | 75 | 76 | 76 | 77 | 78 | 76 | 76 | 75 | 72 | 68 | 72 | 73 | 74 | 74 | 73 | 72 | |
| 8000 | 70 | 70 | 71 | 71 | 72 | 71 | 73 | 73 | 71 | 71 | 66 | 64 | 68 | 69 | 70 | 70 | 69 | 68 | |
| 10000 | 69 | 70 | 70 | 71 | 71 | 70 | 71 | 72 | 69 | 68 | 65 | 63 | 66 | 66 | 67 | 67 | 64 | 63 | |
| OVERALL | 100 | 100 | 99 | 101 | 104 | 105 | 105 | 105 | 107 | 112 | 113 | 112 | 112 | 111 | 106 | 106 | 101 | 98 | |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:

IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-040
RUN 01

08 MAY 75

PAGE 6

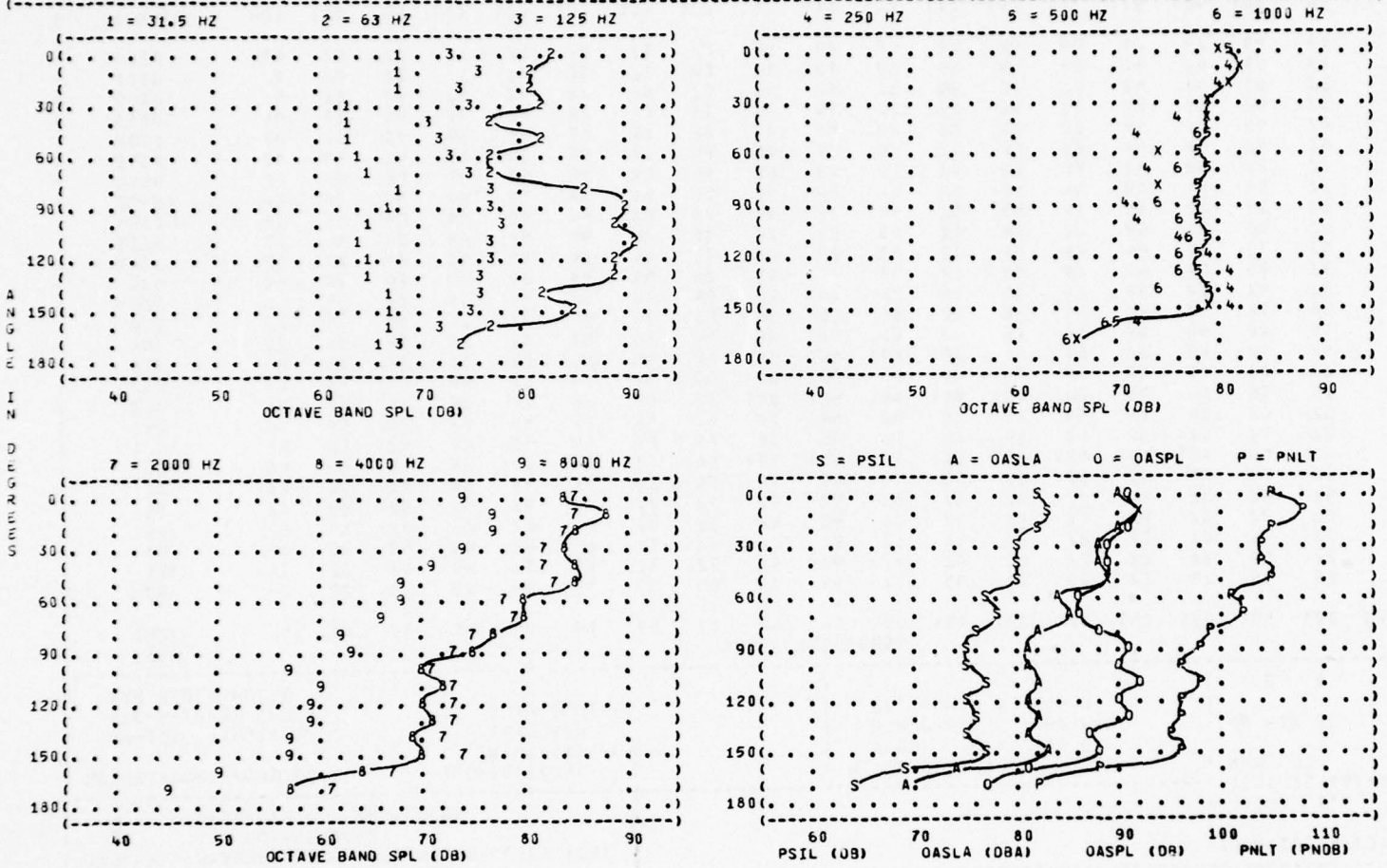


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.+
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 5

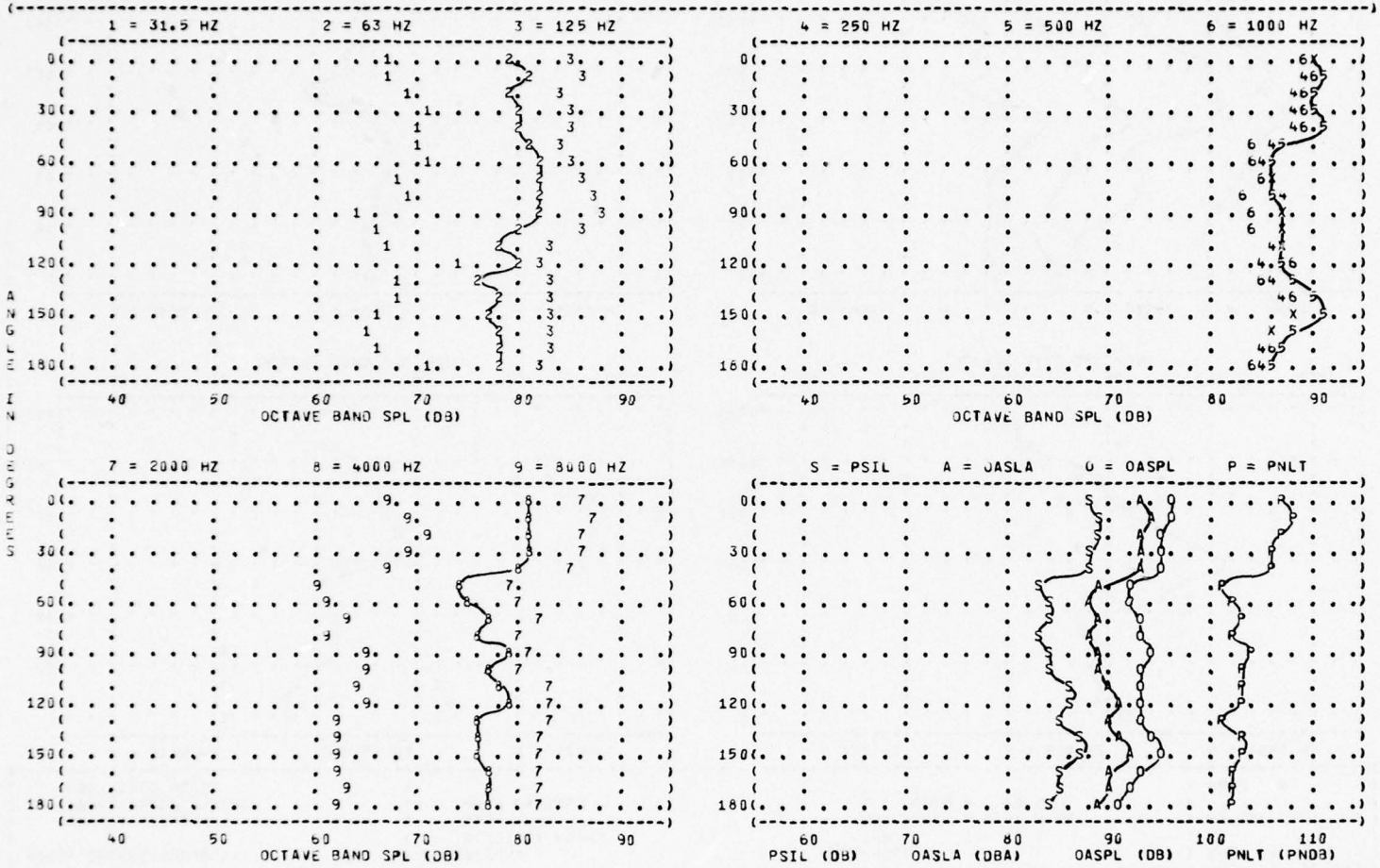


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:

MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-040
RUN 03

08 MAY 75

PAGE 6

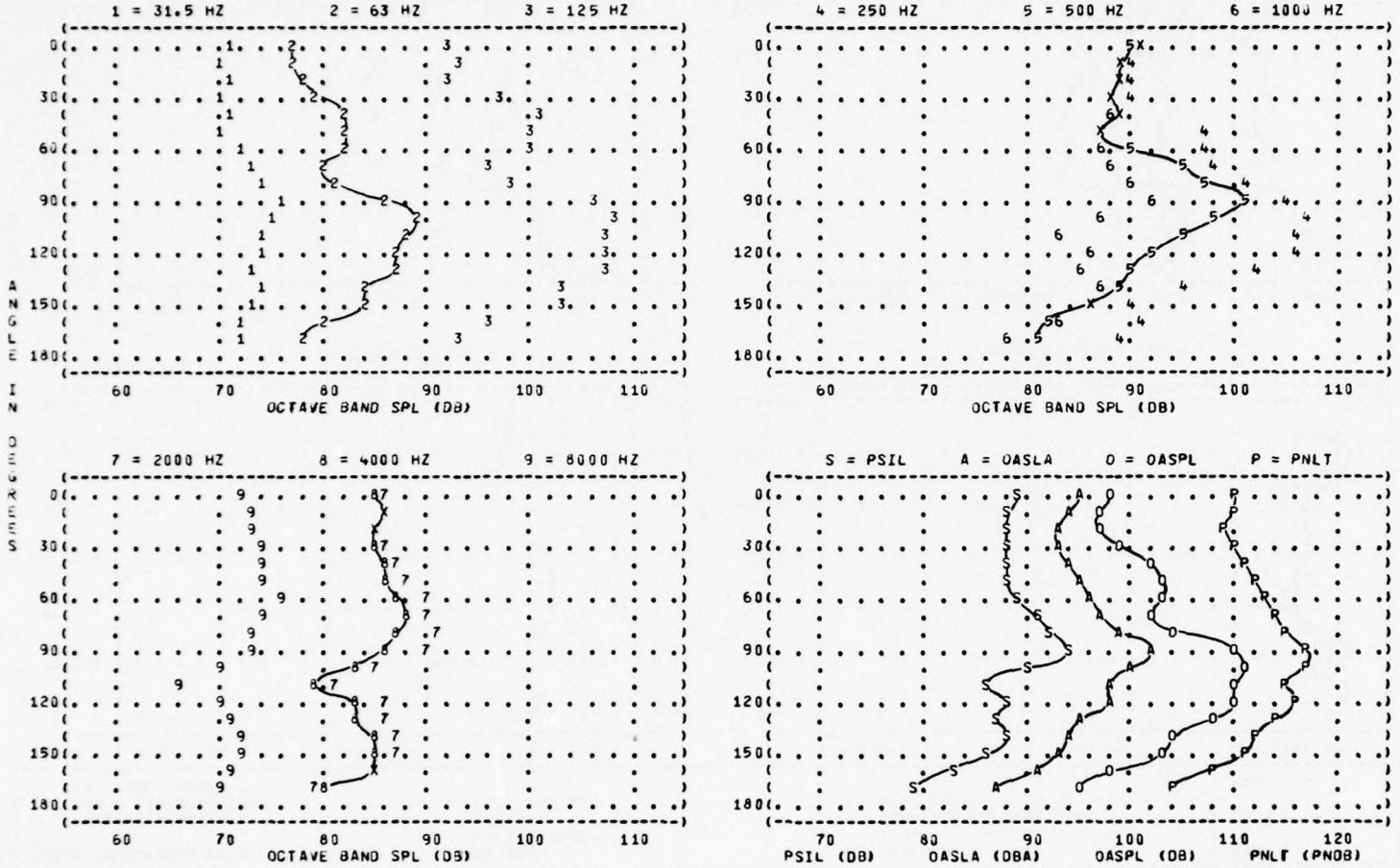


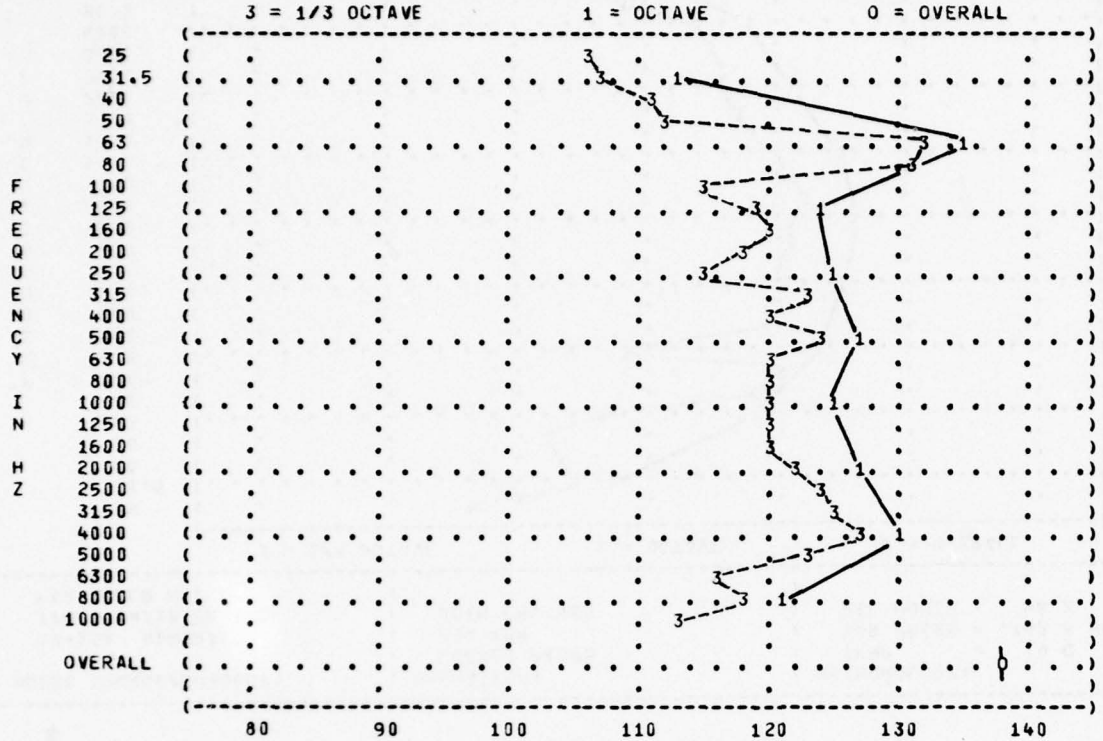
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 3




| | PWL 1/3 OCTAVE | PWL OCTAVE |
|---|---|---|
| 25 | 106.5 | |
| 31.5 | 106.7 | 113.4 |
| 40 | 111.0 | |
| 50 | 111.8 | |
| 63 | 132.3 | 134.6 |
| 80 | 130.5 | |
| 100 | 114.7 | |
| 125 | 119.5 | 123.6 |
| 160 | 120.5 | |
| 200 | 117.7 | |
| 250 | 115.0 | 124.9 |
| 315 | 123.4 | |
| 400 | 120.3 | |
| 500 | 123.8 | 126.5 |
| 630 | 120.1 | |
| 800 | 120.1 | |
| 1000 | 120.2 | 125.0 |
| 1250 | 120.3 | |
| 1600 | 120.1 | |
| 2000 | 121.6 | 127.0 |
| 2500 | 124.1 | |
| 3150 | 125.3 | |
| 4000 | 126.5 | 129.9 |
| 5000 | 123.0 | |
| 6300 | 116.5 | |
| 8000 | 118.2 | 121.2 |
| 10000 | 113.2 | |
| OVERALL | | 137.6 |

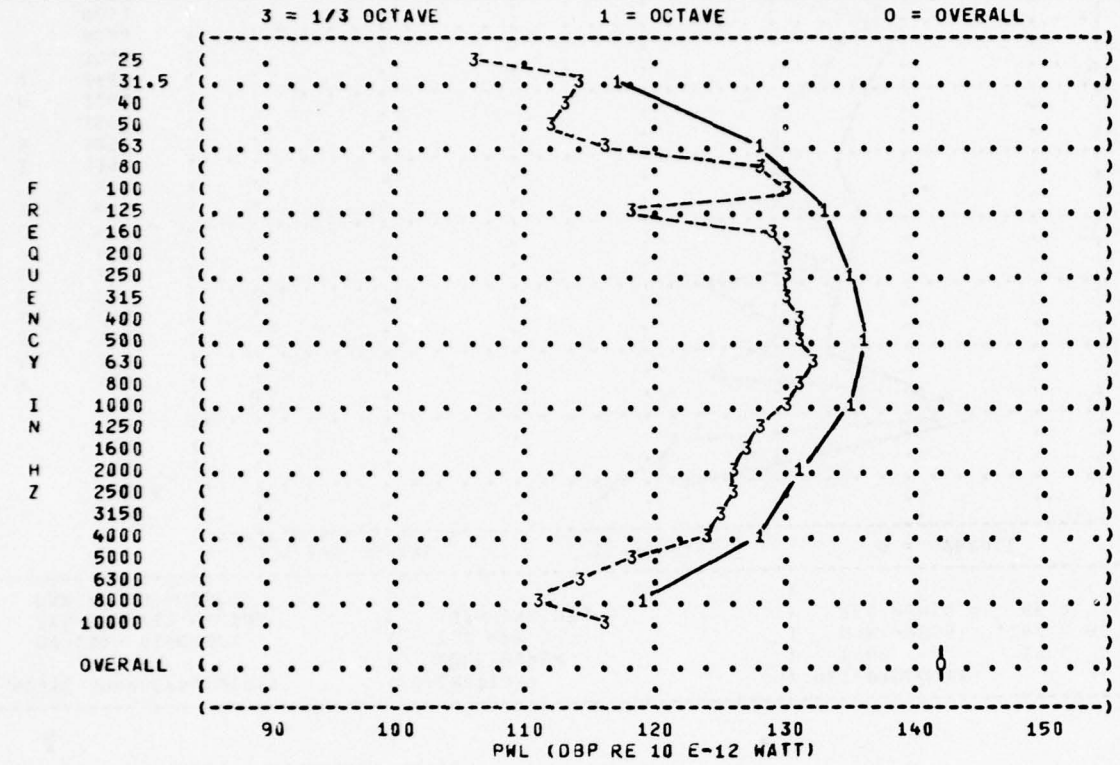
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 3




| PWL | 1/3 OCTAVE | OCTAVE |
|---|---|---|
| | 106.2 | |
| | 113.6 | 116.8 |
| | 113.3 | |
| | 111.8 | |
| | 116.5 | 128.2 |
| | 127.8 | |
| | 130.0 | |
| | 118.3 | 132.7 |
| | 129.1 | |
| | 130.2 | |
| | 129.6 | 134.6 |
| | 129.7 | |
| | 130.9 | |
| | 130.8 | 136.1 |
| | 132.2 | |
| | 130.6 | |
| | 130.0 | 134.6 |
| | 128.5 | |
| | 127.0 | |
| | 126.4 | 131.2 |
| | 125.7 | |
| | 124.8 | |
| | 123.8 | 127.8 |
| | 118.3 | |
| | 114.1 | |
| | 110.7 | 118.8 |
| | 115.9 | |
| | | 141.6 |

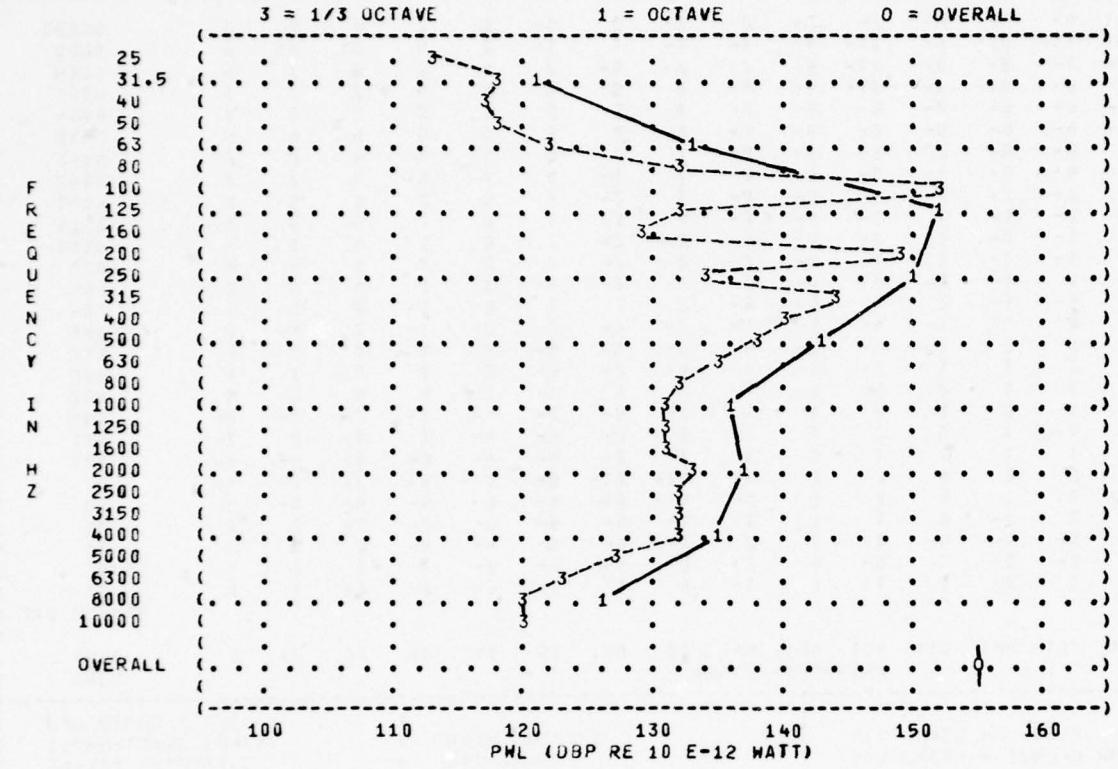
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 3




| FREQUENCY | PWL 1/3 OCTAVE | PWL OCTAVE |
|---|---|---|
| 25 | 112.9 | |
| 31.5 | 118.2 | 121.2 |
| 40 | 116.8 | |
| 50 | 118.4 | |
| 63 | 122.2 | 132.9 |
| 80 | 132.3 | |
| 100 | 151.9 | |
| 125 | 131.9 | 151.9 |
| 160 | 129.2 | |
| 200 | 149.0 | |
| 250 | 134.3 | 150.4 |
| 315 | 144.2 | |
| 400 | 139.7 | |
| 500 | 138.1 | 142.8 |
| 630 | 135.2 | |
| 800 | 131.8 | |
| 1000 | 131.1 | 136.1 |
| 1250 | 131.0 | |
| 1600 | 131.2 | |
| 2000 | 132.9 | 136.8 |
| 2500 | 131.7 | |
| 3150 | 131.8 | |
| 4000 | 131.6 | 135.4 |
| 5000 | 127.3 | |
| 6300 | 123.1 | |
| 8000 | 119.8 | 126.0 |
| 10000 | 119.9 | |
| OVERALL | | 154.8 |

TABLE: 6 DIRECTIVITY INDEX (DB)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 4

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | 3 | 1 | -1 | -3 | -0 | -1 | 1 | 0 | -1 | -3 | -1 | 1 | -2 | 0 | 4 | 2 | 0 | 2 | |
| 31.5 | 4 | 2 | 3 | -1 | -2 | -1 | -1 | -2 | 2 | 0 | -0 | -1 | -0 | -2 | 0 | 2 | 1 | 2 | |
| 40 | 2 | 2 | 3 | -3 | -5 | -3 | -3 | -1 | 3 | 3 | -1 | -4 | -0 | -1 | 1 | 1 | 2 | -1 | |
| 50 | 5 | 2 | -1 | -2 | -5 | -5 | -4 | -2 | 1 | 3 | 1 | 2 | -0 | 1 | -0 | -2 | 1 | -0 | |
| 63 | -4 | -6 | -5 | -4 | -9 | -4 | -10 | -10 | -0 | 3 | 3 | 4 | 2 | 3 | -5 | -2 | -10 | -13 | |
| 80 | -4 | -7 | -7 | -5 | -10 | -5 | -10 | -10 | -1 | 3 | 3 | 4 | 2 | 3 | -5 | -2 | -10 | -13 | |
| 100 | -4 | -4 | -4 | -3 | -4 | -4 | -3 | -1 | 1 | 2 | 1 | 2 | 1 | 1 | 0 | -0 | -1 | -3 | |
| 125 | -2 | 2 | -0 | 1 | -4 | -5 | -3 | 0 | 2 | 1 | 3 | 0 | 1 | -1 | 1 | -2 | -6 | -10 | |
| 160 | -2 | -0 | -2 | -1 | -4 | -3 | -2 | -1 | 1 | 1 | 2 | 1 | 2 | 1 | 0 | -1 | -4 | -9 | |
| 200 | 4 | 2 | 4 | 4 | -2 | -4 | 0 | -2 | -1 | -3 | -0 | 2 | 0 | 0 | -1 | 2 | -3 | -7 | |
| 250 | 1 | 1 | 2 | 2 | 0 | -2 | -2 | -3 | -0 | -3 | -2 | 1 | 1 | 2 | 2 | 2 | -4 | -11 | |
| 315 | 3 | 4 | 3 | 1 | -2 | -6 | -5 | -5 | -5 | -7 | -9 | -3 | 3 | 5 | 5 | 4 | -5 | -13 | |
| 400 | 3 | 4 | 3 | -1 | -0 | -2 | -2 | -1 | -1 | -4 | -4 | -1 | -0 | 3 | 3 | 3 | -6 | -11 | |
| 500 | 1 | 1 | 0 | -1 | -0 | 1 | 1 | 2 | -0 | -0 | 1 | 2 | -1 | -4 | -2 | -2 | -9 | -13 | |
| 630 | 3 | 6 | 4 | 3 | 1 | -1 | -2 | -2 | -3 | -0 | -0 | -0 | -1 | 0 | 2 | 1 | -9 | -12 | |
| 800 | 3 | 4 | 4 | 2 | 2 | 0 | -2 | -2 | -3 | -2 | 1 | 2 | -1 | -1 | -3 | 2 | -9 | -12 | |
| 1000 | 4 | 5 | 4 | 3 | 3 | 1 | -2 | -0 | -3 | -2 | -3 | -1 | -0 | -0 | -1 | 3 | -7 | -12 | |
| 1250 | 4 | 6 | 5 | 3 | 3 | 1 | -3 | 0 | -3 | -4 | -1 | 1 | -3 | -2 | -2 | 2 | -7 | -12 | |
| 1600 | 7 | 6 | 5 | 3 | 3 | 3 | -2 | 1 | -3 | -3 | -5 | -3 | -3 | -2 | -3 | -0 | -8 | -14 | |
| 2000 | 7 | 7 | 6 | 4 | 4 | 4 | -1 | 1 | -3 | -5 | -6 | -4 | -5 | -4 | -5 | -3 | -10 | -16 | |
| 2500 | 7 | 8 | 6 | 4 | 4 | 5 | 0 | 1 | -3 | -6 | -9 | -7 | -9 | -9 | -9 | -9 | -14 | -21 | |
| 3150 | 6 | 9 | 5 | 5 | 5 | 5 | 0 | 0 | -3 | -6 | -9 | -8 | -9 | -9 | -10 | -9 | -15 | -22 | |
| 4000 | 4 | 9 | 5 | 3 | 5 | 5 | 1 | 1 | -2 | -5 | -9 | -7 | -9 | -9 | -11 | -11 | -17 | -23 | |
| 5000 | 1 | 7 | 7 | 6 | 4 | 5 | 0 | 0 | -4 | -4 | -10 | -7 | -10 | -9 | -11 | -11 | -17 | -23 | |
| 6300 | 5 | 7 | 8 | 8 | 4 | 2 | -0 | -2 | -7 | -5 | -10 | -6 | -8 | -8 | -10 | -10 | -16 | -22 | |
| 8000 | 7 | 10 | 10 | 4 | 3 | -1 | 1 | -1 | -5 | -4 | -12 | -9 | -10 | -11 | -13 | -13 | -20 | -25 | |
| 10000 | 5 | 8 | 8 | 7 | 3 | -0 | 0 | -2 | -2 | -3 | -7 | -5 | -5 | -5 | -8 | -9 | -15 | -21 | |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | 3 | 2 | 2 | -3 | -3 | -2 | -1 | -1 | 2 | 1 | -1 | -2 | -1 | -1 | 1 | 1 | 2 | 0 | |
| 63 | -4 | -6 | -6 | -5 | -10 | -5 | -10 | -10 | -1 | 3 | 3 | 4 | 2 | 3 | -5 | -2 | -10 | -12 | |
| 125 | -2 | 0 | -1 | -0 | -4 | -4 | -3 | -0 | 1 | 1 | 2 | 1 | 2 | -0 | 1 | -1 | -4 | -8 | |
| 250 | 3 | 4 | 3 | 2 | -1 | -5 | -3 | -4 | -3 | -6 | -5 | -1 | 2 | 4 | 4 | 4 | -5 | -11 | |
| 500 | 2 | 3 | 2 | 0 | 0 | 0 | -0 | 1 | -1 | -1 | -0 | 1 | -1 | -0 | 1 | 0 | -8 | -12 | |
| 1000 | 4 | 5 | 4 | 3 | 3 | 1 | -2 | -1 | -3 | -3 | -1 | 1 | -1 | -1 | -2 | 2 | -7 | -12 | |
| 2000 | 7 | 7 | 6 | 4 | 4 | 4 | -0 | 1 | -3 | -5 | -7 | -5 | -6 | -5 | -6 | -4 | -11 | -17 | |
| 4000 | 4 | 9 | 5 | 4 | 5 | 5 | 0 | 0 | -3 | -5 | -9 | -7 | -10 | -9 | -11 | -10 | -16 | -23 | |
| 8000 | 6 | 9 | 9 | 6 | 3 | 0 | 1 | -1 | -5 | -4 | -10 | -7 | -9 | -8 | -11 | -11 | -17 | -23 | |
| OVERALL | 2 | 3 | 1 | 0 | -1 | 0 | -4 | -3 | -1 | 1 | 1 | 2 | 1 | 1 | -3 | -1 | -9 | -12 | |

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | 0 | -0 | -0 | 1 | 1 | 2 | 2 | -1 | 0 | -5 | -2 | -1 | -0 | -2 | 3 | -2 | 0 | 1 | 7 |
| 31.5 | -2 | -3 | 1 | 2 | 2 | 1 | 3 | -1 | 0 | -4 | -2 | -1 | 0 | 0 | -0 | -1 | -5 | -4 | 1 |
| 40 | -2 | -1 | -1 | 2 | -1 | 0 | -0 | -0 | -2 | -7 | -7 | -5 | 8 | -3 | -4 | -6 | -5 | -4 | 1 |
| 50 | 2 | -1 | -5 | -1 | -4 | -3 | -3 | -3 | -3 | -5 | -4 | 2 | 7 | 4 | -3 | -4 | -3 | -2 | 1 |
| 63 | -2 | -3 | -5 | -4 | -5 | -2 | -3 | -3 | -2 | -6 | -4 | -1 | 8 | -1 | -4 | -4 | -5 | -4 | -2 |
| 80 | -2 | 0 | -1 | 0 | 0 | 1 | 2 | 2 | 2 | 2 | -0 | -3 | -5 | -5 | -2 | -3 | -2 | -2 | -3 |
| 100 | -4 | -3 | -3 | -2 | -1 | -0 | 1 | 2 | 2 | 3 | 1 | -3 | -5 | -5 | -2 | -2 | -3 | -3 | -5 |
| 125 | -2 | -1 | -2 | -2 | -2 | -3 | -3 | -2 | -3 | -3 | -2 | -1 | 5 | 5 | 1 | -1 | -1 | -2 | -2 |
| 160 | 3 | 3 | 1 | 1 | 1 | -3 | -2 | -0 | 1 | 2 | 1 | -1 | -2 | -1 | -1 | -2 | -2 | -0 | -2 |
| 200 | -1 | -2 | -2 | -2 | -2 | -5 | -3 | -0 | 1 | 3 | 2 | 2 | -1 | -1 | -2 | -4 | -5 | -4 | -5 |
| 250 | 3 | 3 | 2 | 2 | 1 | 0 | 0 | -2 | 0 | -1 | 0 | -2 | -3 | -1 | 1 | 2 | 1 | -0 | -0 |
| 315 | 5 | 4 | 3 | 3 | 4 | 0 | -1 | -1 | -1 | -3 | -5 | -4 | -3 | 1 | 2 | 3 | 1 | -1 | -1 |
| 400 | 3 | 3 | 1 | 1 | 2 | -2 | -1 | -1 | 0 | -0 | -2 | -2 | -2 | -1 | 3 | 3 | 1 | -1 | -1 |
| 500 | 2 | 4 | 2 | 2 | 2 | -2 | -2 | -3 | -3 | -1 | -2 | -1 | -1 | 0 | 3 | 4 | -0 | -0 | -3 |
| 630 | 1 | 2 | 2 | 2 | 3 | -0 | -2 | -2 | -3 | -2 | 1 | 0 | -0 | -1 | -0 | 2 | -2 | -2 | -2 |
| 800 | 2 | 3 | 2 | 2 | 2 | -2 | -3 | -3 | -4 | -2 | -1 | 2 | 2 | -1 | 2 | 2 | -2 | -2 | -4 |
| 1000 | 2 | 4 | 3 | 2 | 3 | -2 | -2 | -1 | -2 | -1 | -1 | -1 | 1 | -2 | 1 | 1 | -0 | -1 | -2 |
| 1250 | 3 | 5 | 4 | 3 | 3 | -2 | -3 | -1 | -4 | -4 | -4 | -2 | 2 | -0 | 1 | 1 | 1 | 1 | -1 |
| 1600 | 4 | 5 | 4 | 3 | 3 | -4 | -2 | -1 | -4 | -4 | -3 | -0 | 0 | 2 | 1 | 0 | 1 | 1 | 0 |
| 2000 | 5 | 5 | 5 | 4 | 3 | -2 | -2 | 0 | -2 | -2 | -2 | 0 | -1 | -2 | -1 | -1 | -1 | -1 | -1 |
| 2500 | 3 | 4 | 4 | 4 | 2 | -3 | -2 | -0 | -2 | 1 | -1 | 1 | 1 | -2 | -2 | -2 | -1 | -2 | -2 |
| 3150 | 3 | 3 | 4 | 3 | 2 | -5 | -2 | -1 | -1 | 1 | -1 | 1 | 2 | -2 | -1 | -1 | -0 | -0 | -1 |
| 4000 | 3 | 3 | 4 | 3 | 1 | -4 | -3 | -0 | -2 | 2 | -1 | 0 | 1 | -3 | -2 | -2 | -1 | -1 | -1 |
| 5000 | 3 | 3 | 3 | 3 | 2 | -4 | -4 | -0 | -1 | 1 | -0 | 0 | 1 | -2 | -2 | -2 | -2 | -1 | -1 |
| 6300 | 2 | 1 | 3 | 2 | 2 | -4 | -4 | -1 | -3 | 1 | 1 | 0 | 2 | -2 | -2 | -2 | -2 | -1 | -1 |
| 8000 | 2 | 2 | 6 | 4 | 1 | -5 | -3 | -1 | -3 | -0 | 2 | -0 | 1 | -2 | -2 | -2 | -2 | -1 | -1 |
| 10000 | 2 | 8 | 9 | 7 | 4 | -6 | -3 | -2 | -5 | -6 | -3 | -3 | -4 | -6 | -7 | -6 | -8 | -7 | -8 |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | -2 | -2 | -0 | 2 | 1 | 1 | 2 | -1 | -0 | -5 | -4 | -2 | 5 | -1 | -1 | -3 | -4 | -3 | 2 |
| 63 | -1 | 0 | -1 | -0 | 0 | 0 | 1 | 2 | 2 | 2 | -1 | -2 | -1 | -4 | -2 | -3 | -2 | -2 | -3 |
| 125 | 1 | 1 | -1 | -0 | -0 | -1 | -0 | 1 | 2 | 3 | 1 | -2 | -3 | -2 | -2 | -2 | -2 | -1 | -3 |
| 250 | 3 | 2 | 2 | 1 | 1 | -1 | -1 | -1 | 0 | 1 | 0 | -1 | -2 | -0 | 0 | 1 | -0 | -2 | -2 |
| 500 | 2 | 3 | 2 | 2 | 2 | -1 | -2 | -2 | -2 | -1 | -1 | -1 | -1 | -0 | 2 | 3 | -0 | -1 | -2 |
| 1000 | 3 | 4 | 3 | 3 | 3 | -2 | -2 | -1 | -3 | -2 | -2 | 0 | 2 | -1 | 1 | 1 | -1 | -1 | -2 |
| 2000 | 4 | 5 | 4 | 3 | 3 | -3 | -2 | -0 | -3 | -2 | -2 | 0 | 0 | 0 | -0 | -1 | -0 | -0 | -1 |
| 4000 | 3 | 3 | 4 | 3 | 2 | -4 | -2 | -0 | -1 | 1 | -1 | 0 | 1 | -2 | -2 | -1 | -1 | -1 | -1 |
| 8000 | 2 | 5 | 7 | 5 | 2 | -5 | -3 | -1 | -4 | -0 | 0 | -1 | 0 | -3 | -3 | -3 | -3 | -2 | -3 |
| OVERALL | 2 | 3 | 2 | 2 | 2 | -1 | -1 | -1 | -1 | 0 | -1 | -1 | -0 | -1 | 1 | 1 | -1 | -1 | -2 |

TABLE: 6 DIRECTIVITY INDEX (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 19 C
BAR PRESS = .762 M HG
REL HUMID = 66 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | -5 | -5 | -4 | -4 | -4 | -3 | -2 | 1 | -1 | 1 | 2 | -1 | 0 | 0 | 5 | -1 | -1 | -3 | |
| 31.5 | -2 | -3 | -2 | -4 | -2 | -5 | -3 | -1 | 2 | 3 | 1 | 2 | 0 | -0 | -1 | -1 | -3 | -1 | |
| 40 | -4 | -4 | -3 | -2 | -2 | -2 | -0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | -1 | -1 | |
| 50 | -4 | -4 | -3 | -3 | -3 | -3 | 1 | 2 | 2 | 1 | 0 | 1 | -0 | -0 | 0 | 0 | -1 | -3 | |
| 63 | -2 | -2 | -2 | -2 | -1 | -1 | -0 | -1 | -1 | -1 | 2 | 1 | 1 | 0 | 1 | -0 | -1 | -1 | |
| 80 | -9 | -9 | -9 | -7 | -3 | -3 | -4 | -7 | -6 | 1 | 4 | 4 | 3 | 2 | -1 | -1 | -6 | -9 | |
| 100 | -13 | -11 | -12 | -7 | -3 | -4 | -4 | -8 | -6 | 2 | 4 | 3 | 3 | 3 | -1 | -1 | -8 | -11 | |
| 125 | -8 | -8 | -7 | -6 | -3 | -3 | -4 | -6 | -5 | 3 | 3 | 3 | 3 | 2 | -1 | -1 | -6 | -9 | |
| 160 | -1 | -1 | -2 | -5 | -4 | -4 | -4 | -4 | -4 | 0 | 4 | 3 | 4 | 1 | -3 | -4 | -4 | -9 | |
| 200 | -14 | -17 | -14 | -17 | -16 | -7 | -6 | -7 | -4 | 2 | 5 | 4 | 5 | 1 | -7 | -13 | -13 | -14 | |
| 250 | -6 | -5 | -7 | -6 | -6 | -5 | -5 | -3 | -0 | 3 | 4 | 3 | 2 | -1 | -5 | -6 | -9 | -12 | |
| 315 | -8 | -9 | -11 | -9 | -11 | -5 | -5 | -0 | 3 | 5 | 4 | 2 | -3 | -9 | -10 | -10 | -11 | -15 | |
| 400 | -7 | -9 | -9 | -9 | -9 | -8 | -3 | -1 | 0 | 5 | 4 | 2 | -1 | -3 | -5 | -9 | -14 | -13 | |
| 500 | -5 | -5 | -6 | -6 | -5 | -9 | -7 | 0 | 4 | 7 | 2 | -3 | -7 | -7 | -6 | -9 | -11 | -13 | |
| 630 | -1 | -3 | -3 | -4 | -4 | -5 | -5 | 0 | 1 | 7 | 2 | -4 | -5 | -7 | -5 | -7 | -11 | -14 | |
| 800 | 2 | 1 | 2 | -0 | -1 | -2 | -3 | 0 | 2 | 5 | -0 | -4 | -4 | -4 | -2 | -3 | -6 | -10 | |
| 1000 | 4 | 1 | 2 | 1 | 0 | -1 | -1 | 0 | 1 | 3 | -2 | -5 | -0 | -2 | 0 | -1 | -4 | -10 | |
| 1250 | 2 | 1 | -0 | 0 | 0 | 1 | 2 | 1 | 2 | 2 | -1 | -6 | -2 | -3 | -0 | -1 | -4 | -9 | |
| 1600 | -0 | -2 | -3 | -2 | -1 | 0 | 2 | 2 | 3 | 2 | -1 | -6 | -1 | -2 | -0 | -0 | -3 | -9 | |
| 2000 | -2 | -3 | -3 | -2 | -1 | 0 | 3 | 3 | 4 | 2 | -3 | -7 | -3 | -3 | -2 | -2 | -4 | -10 | |
| 2500 | -3 | -2 | -3 | -2 | -1 | 0 | 2 | 2 | 3 | 2 | -3 | -7 | -3 | -2 | -2 | -1 | -2 | -8 | |
| 3150 | -1 | -0 | -1 | -1 | 0 | 1 | 2 | 3 | 2 | 1 | -3 | -8 | -2 | -3 | -1 | -1 | -1 | -7 | |
| 4000 | -0 | 1 | -0 | 0 | 2 | 1 | 2 | 2 | 2 | -0 | -2 | -6 | -2 | -2 | -1 | -0 | -1 | -5 | |
| 5000 | 0 | -0 | 0 | 1 | 2 | 2 | 3 | 1 | 1 | -0 | -3 | -7 | -2 | -2 | -1 | -0 | -1 | -4 | |
| 6300 | -1 | -0 | -0 | 1 | 1 | 2 | 3 | 1 | 1 | 0 | -3 | -7 | -3 | -2 | -1 | -1 | -2 | -3 | |
| 8000 | -0 | -0 | 1 | 1 | 2 | 0 | 3 | 2 | 0 | 0 | -4 | -6 | -3 | -2 | -0 | -0 | -2 | -2 | |
| 10000 | 0 | 2 | 2 | 3 | 2 | 1 | 2 | 3 | 0 | -1 | -3 | -6 | -3 | -2 | -1 | -2 | -4 | -5 | |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | -3 | -3 | -3 | -3 | -2 | -3 | -2 | -0 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | -0 | -2 | -1 | |
| 63 | -8 | -8 | -8 | -6 | -3 | -3 | -3 | -5 | -4 | 1 | 4 | 3 | 2 | 2 | -1 | -1 | -5 | -7 | |
| 125 | -12 | -11 | -12 | -7 | -3 | -4 | -4 | -8 | -6 | 2 | 4 | 3 | 3 | 3 | -1 | -1 | -8 | -11 | |
| 250 | -12 | -13 | -13 | -13 | -14 | -6 | -5 | -4 | -1 | 3 | 5 | 4 | 4 | -0 | -8 | -12 | -12 | -14 | |
| 500 | -5 | -6 | -6 | -6 | -6 | -8 | -4 | -0 | 2 | 6 | 3 | -0 | -3 | -5 | -6 | -9 | -13 | -14 | |
| 1000 | 3 | 1 | 1 | 0 | -0 | -1 | -0 | 1 | 2 | 4 | -1 | -4 | -2 | -3 | -1 | -1 | -5 | -10 | |
| 2000 | -2 | -2 | -3 | -2 | -1 | 0 | 2 | 3 | 3 | 2 | -3 | -7 | -2 | -2 | -1 | -1 | -3 | -9 | |
| 4000 | -1 | 0 | -1 | 0 | 1 | 1 | 2 | 2 | 2 | 0 | -2 | -7 | -2 | -2 | -1 | -1 | -1 | -6 | |
| 8000 | -0 | 0 | 0 | 2 | 1 | 1 | 3 | 2 | 1 | 0 | -3 | -6 | -3 | -2 | -1 | -1 | -2 | -3 | |
| OVERALL | -9 | -9 | -10 | -8 | -5 | -4 | -4 | -5 | -2 | 3 | 4 | 3 | 3 | 1 | -3 | -4 | -9 | -12 | |

FIGURE 5: OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 13

| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |

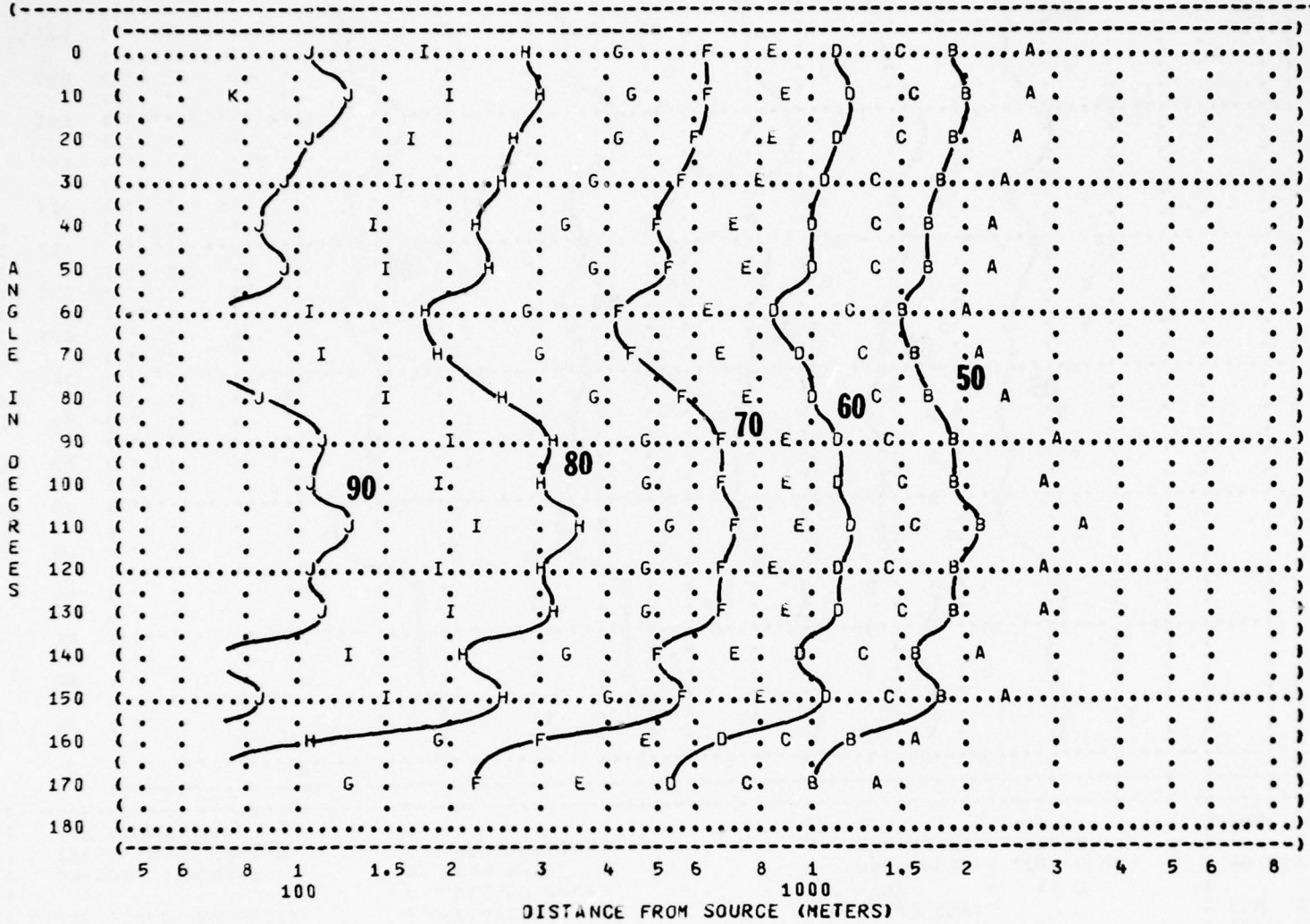


FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 13

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

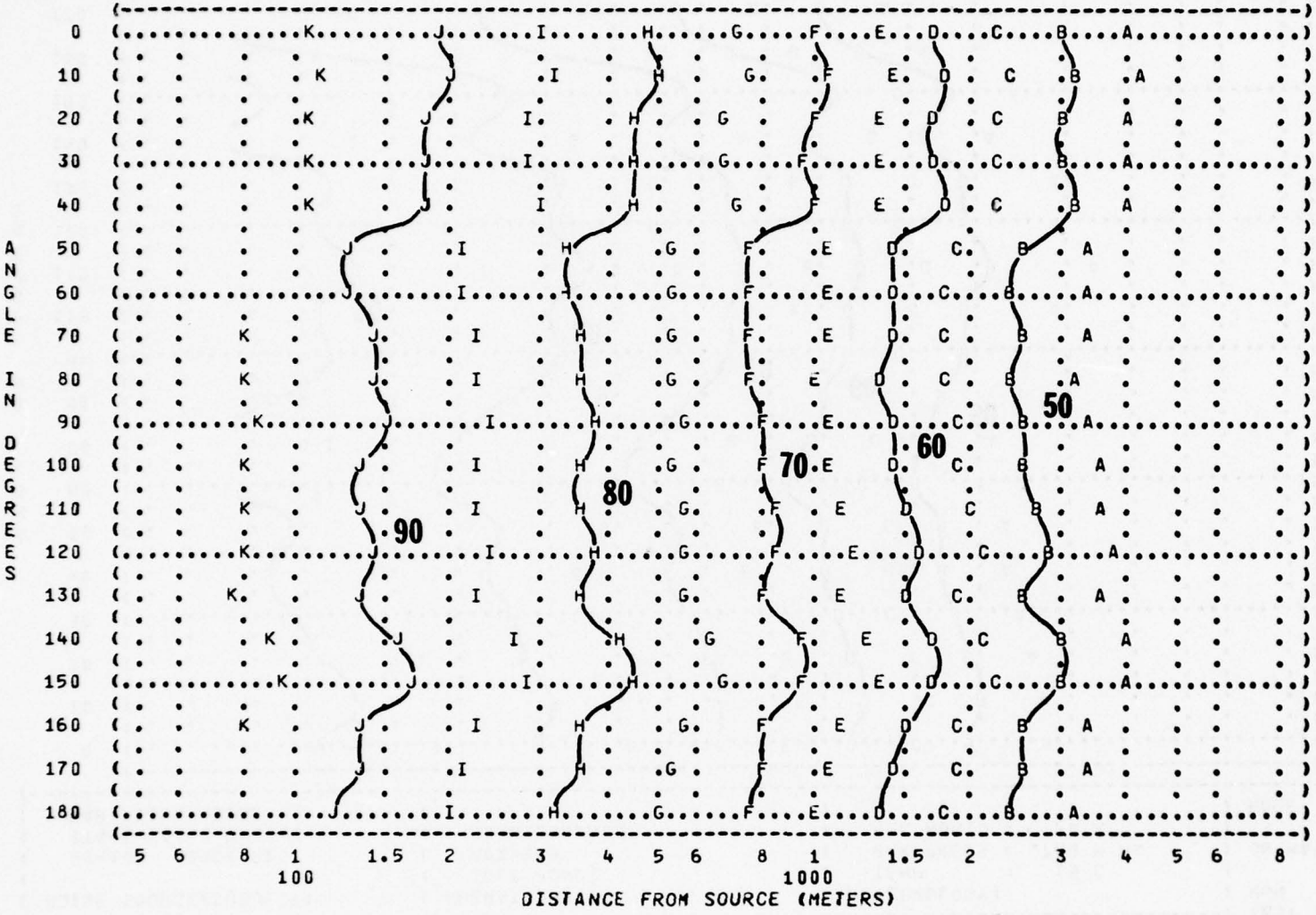


FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 13

| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |
| N | 110 |

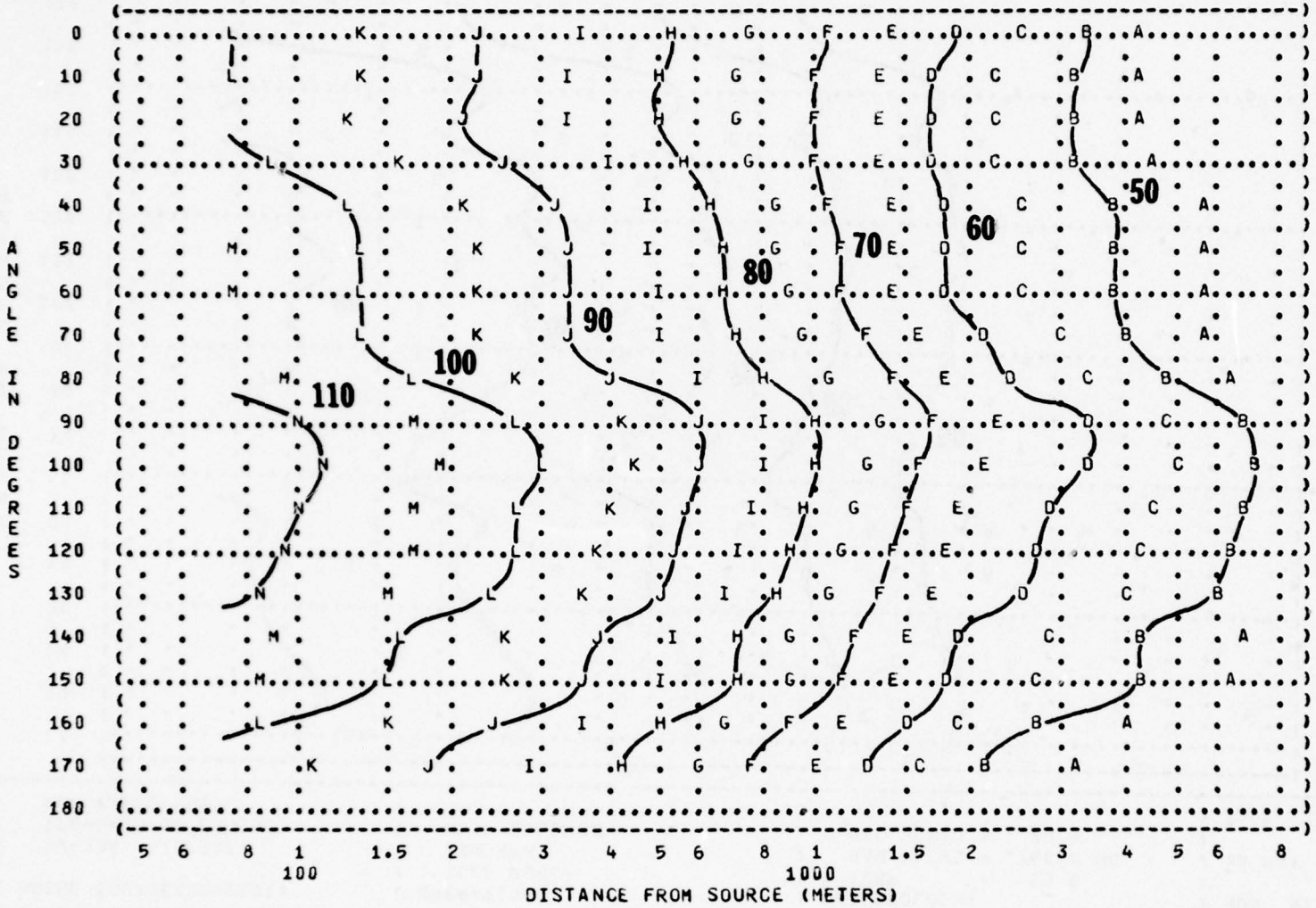


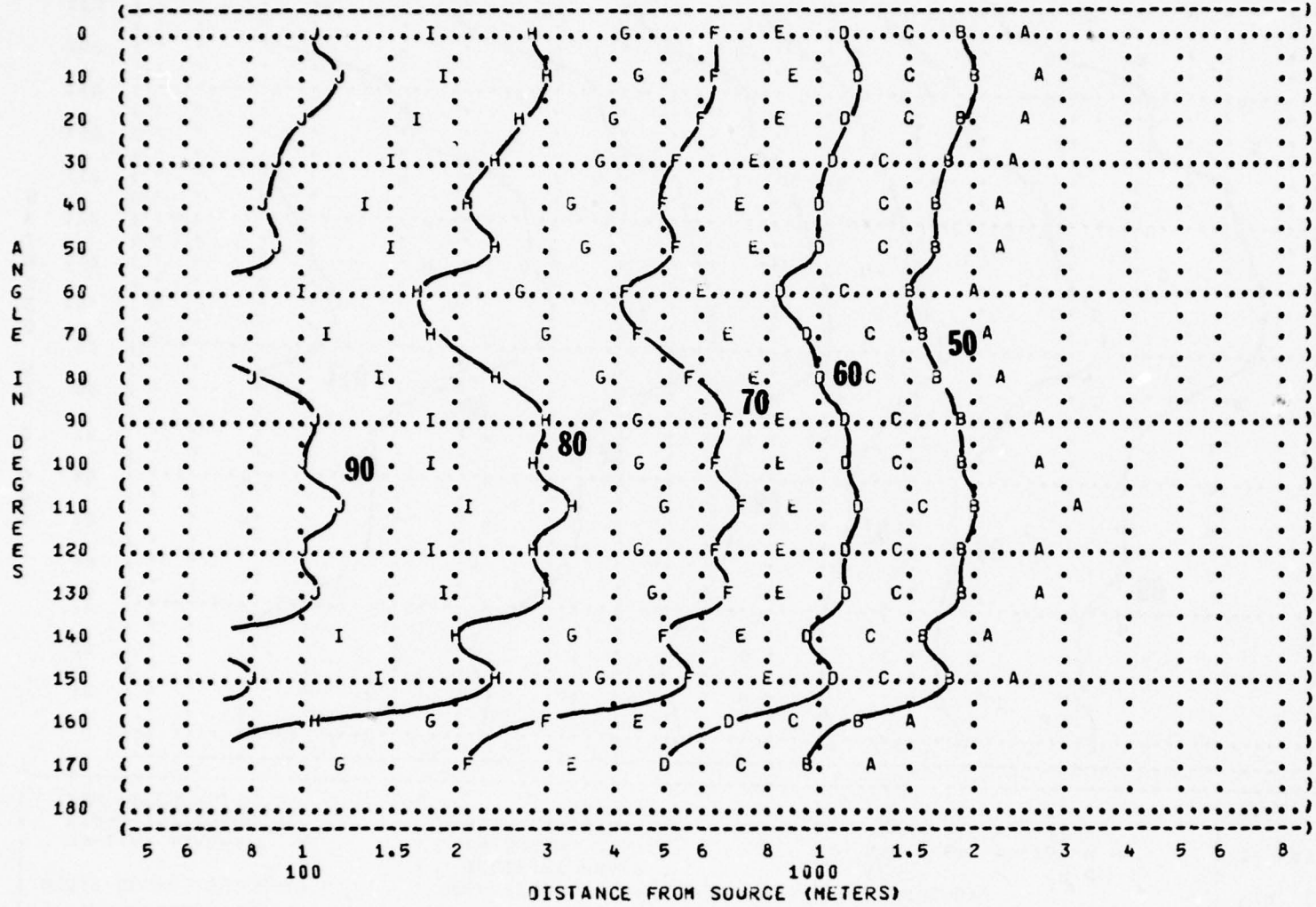
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 14




| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |

FIGURE: 6

C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-040
RUN 02

08 MAY 75

PAGE 14

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |

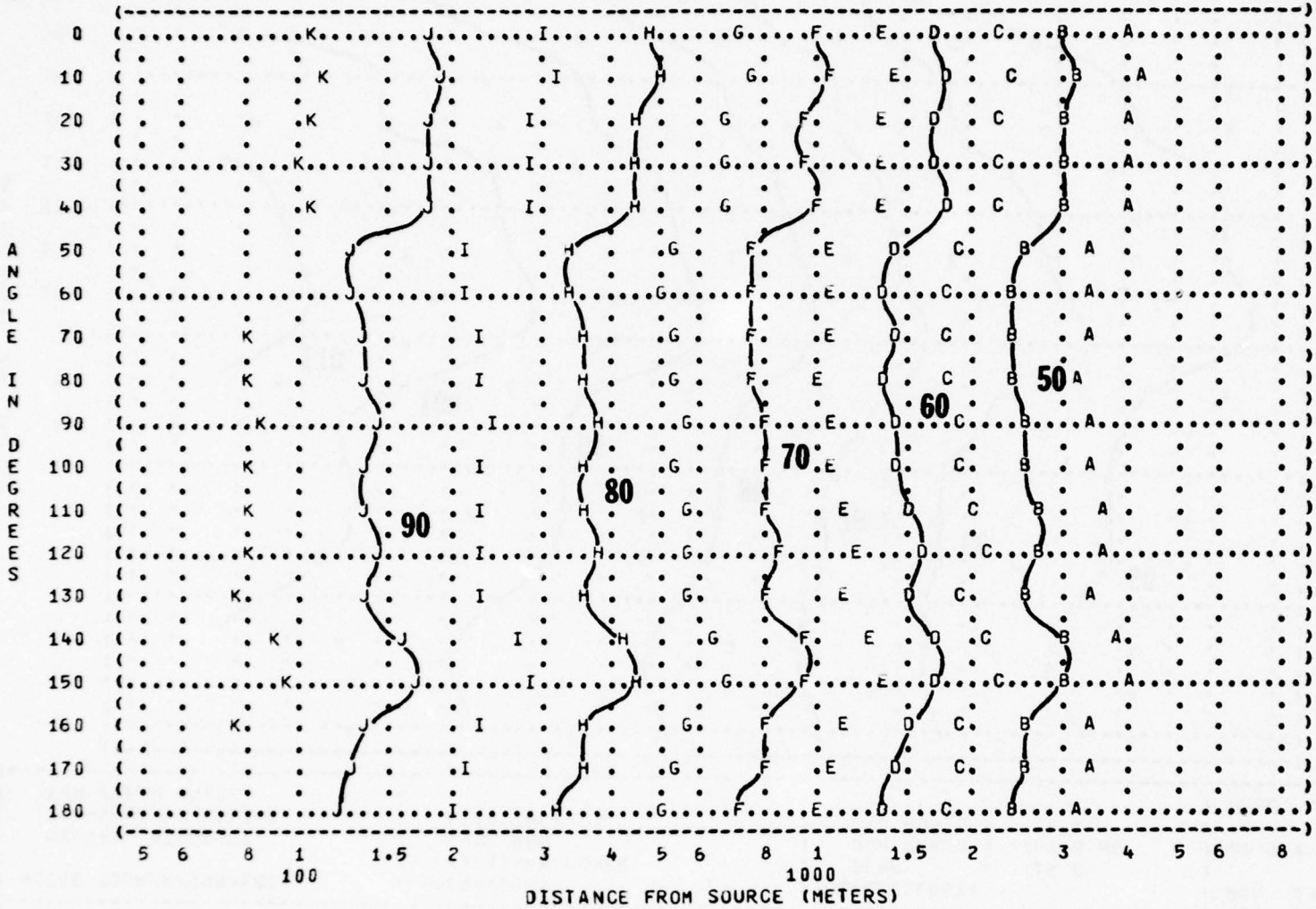


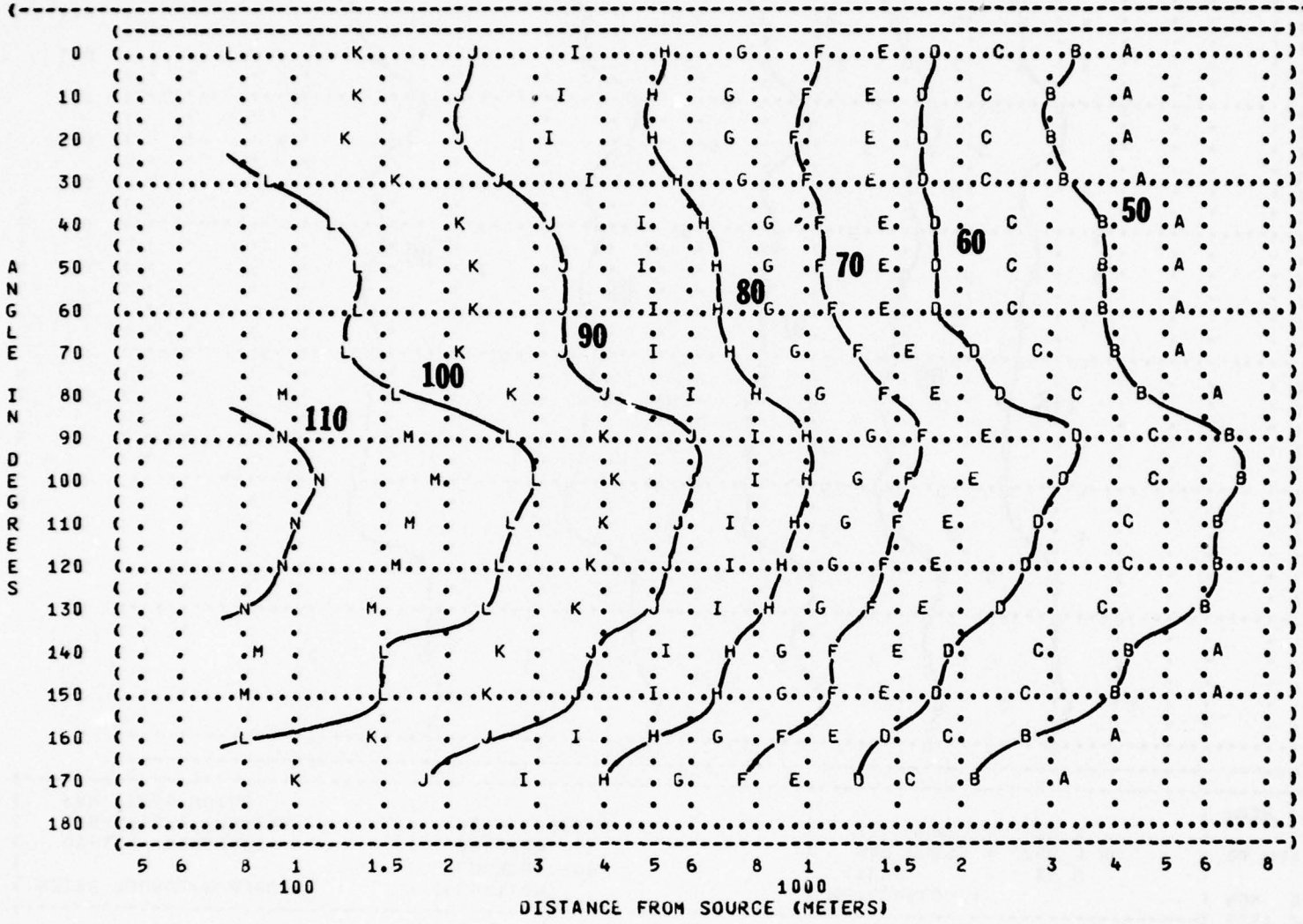
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 14




| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |
| M | 105 |
| N | 110 |

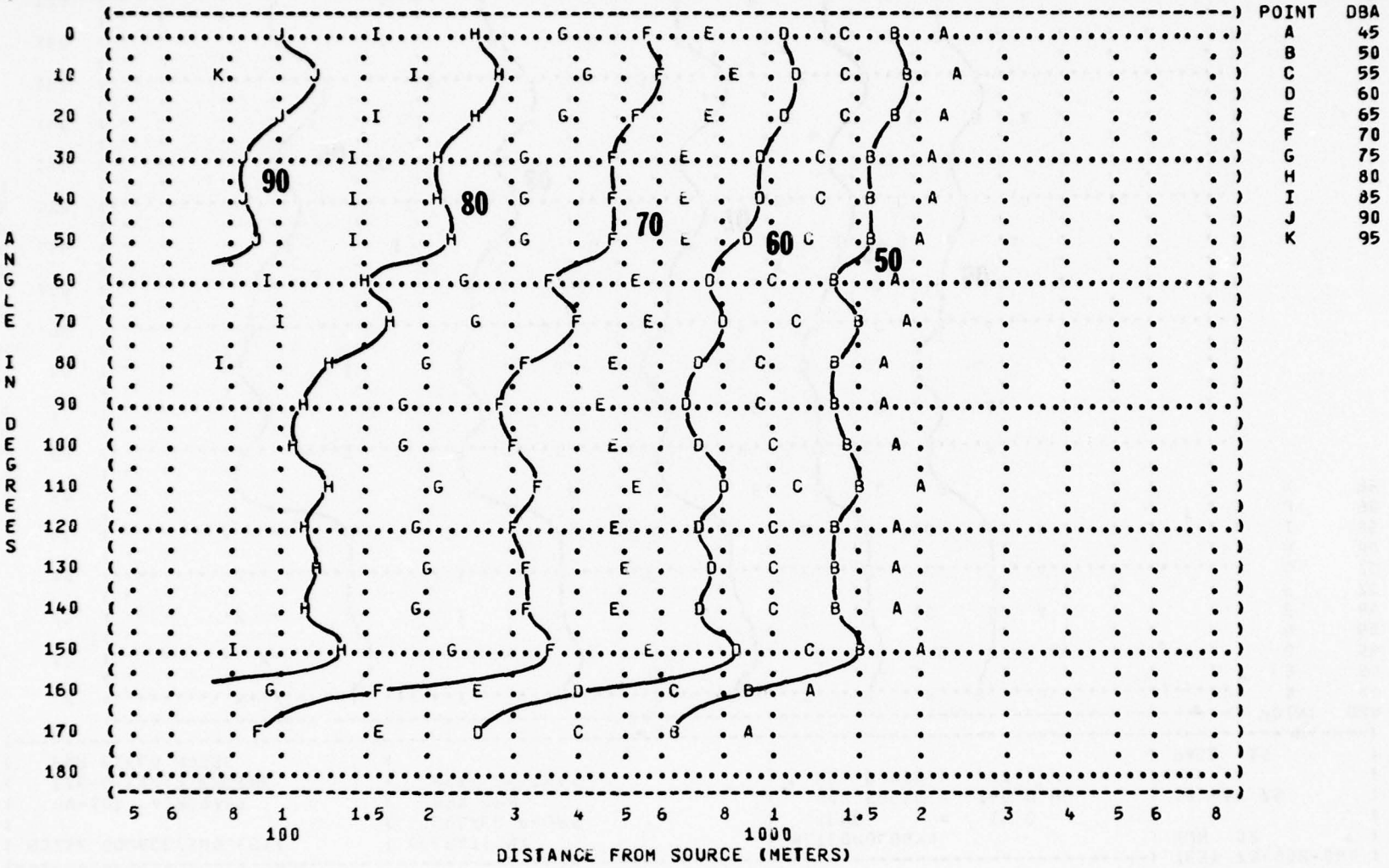
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |

FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

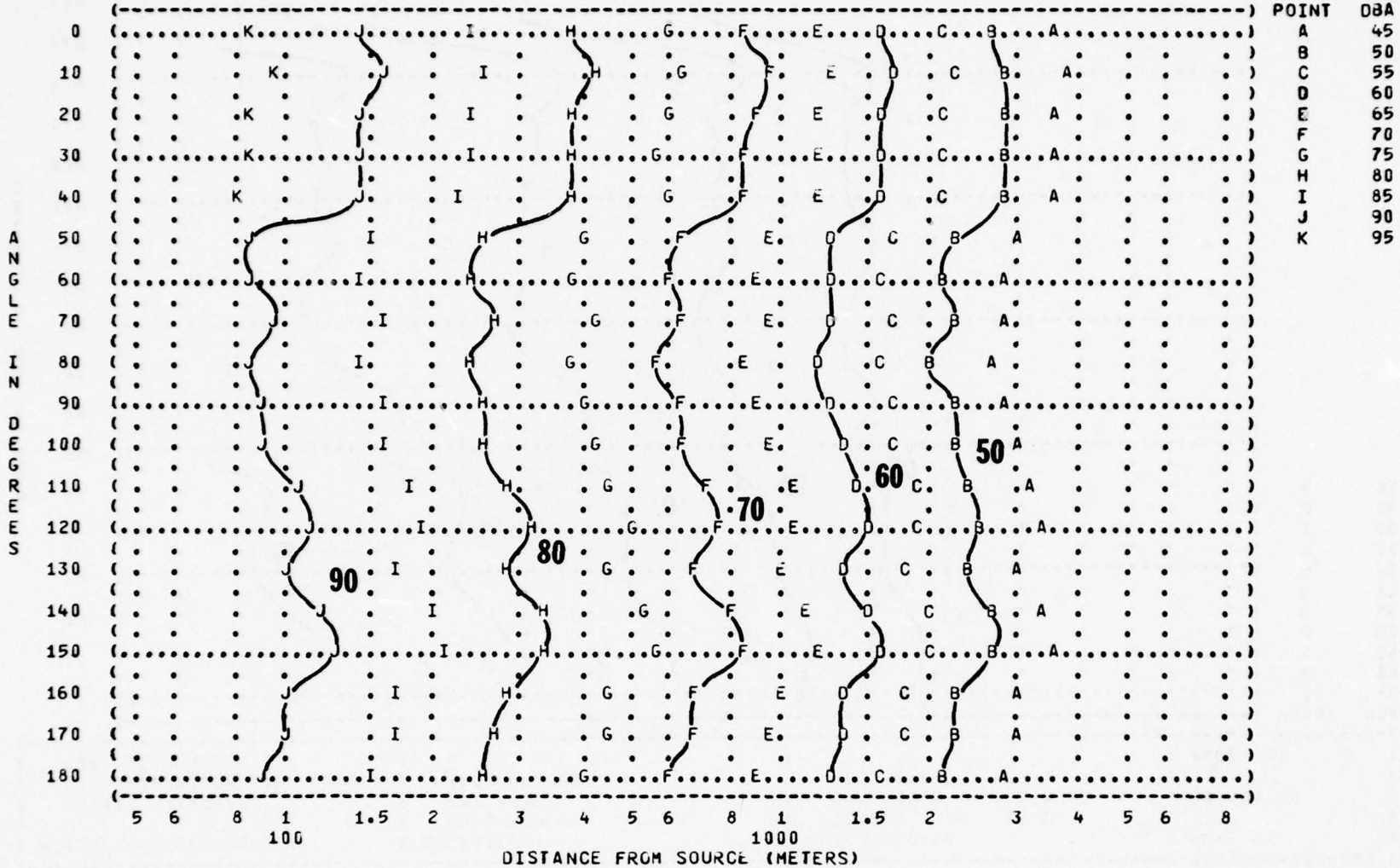


FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 15

| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |

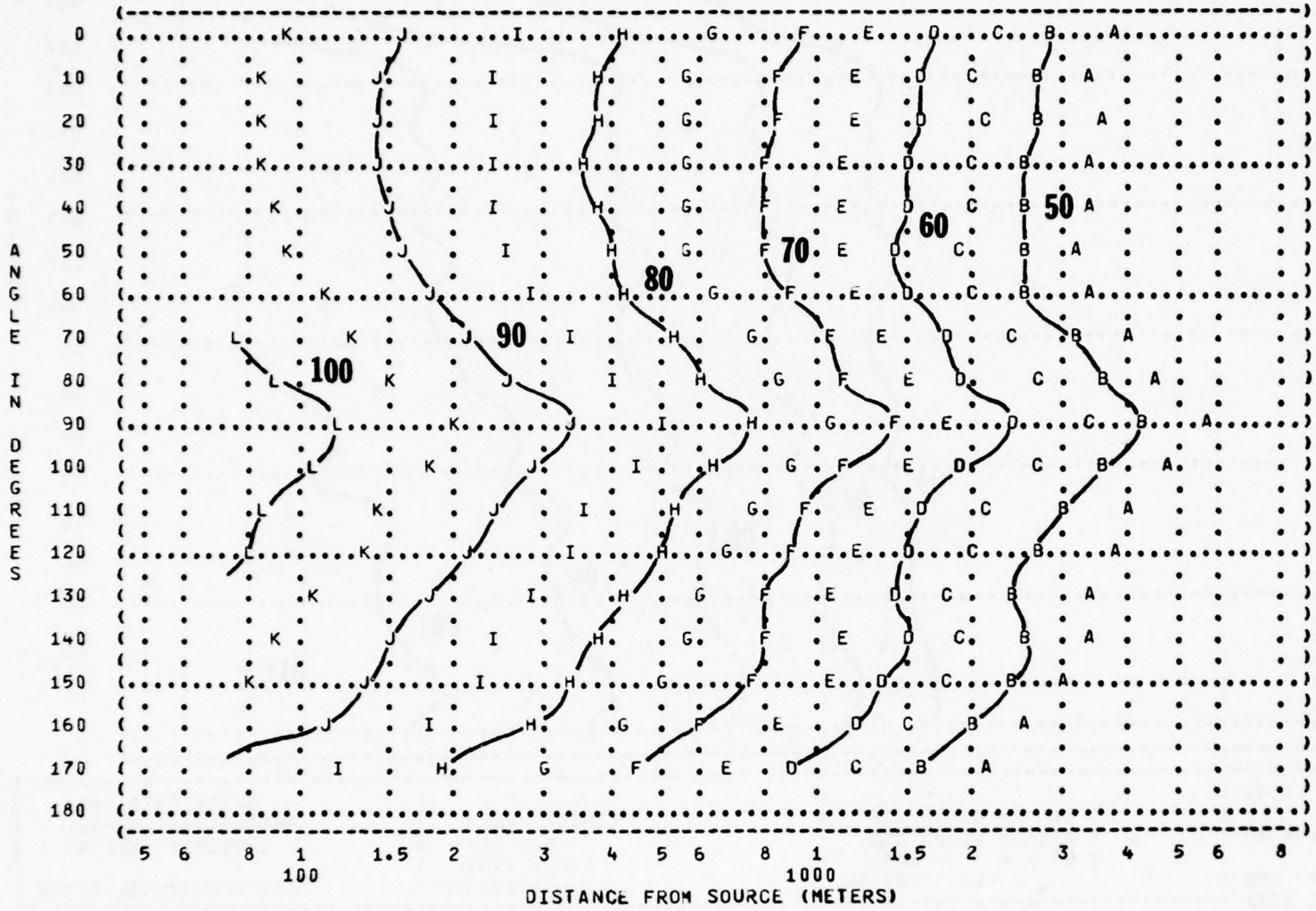


FIGURE 8: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |
| K | 110 |

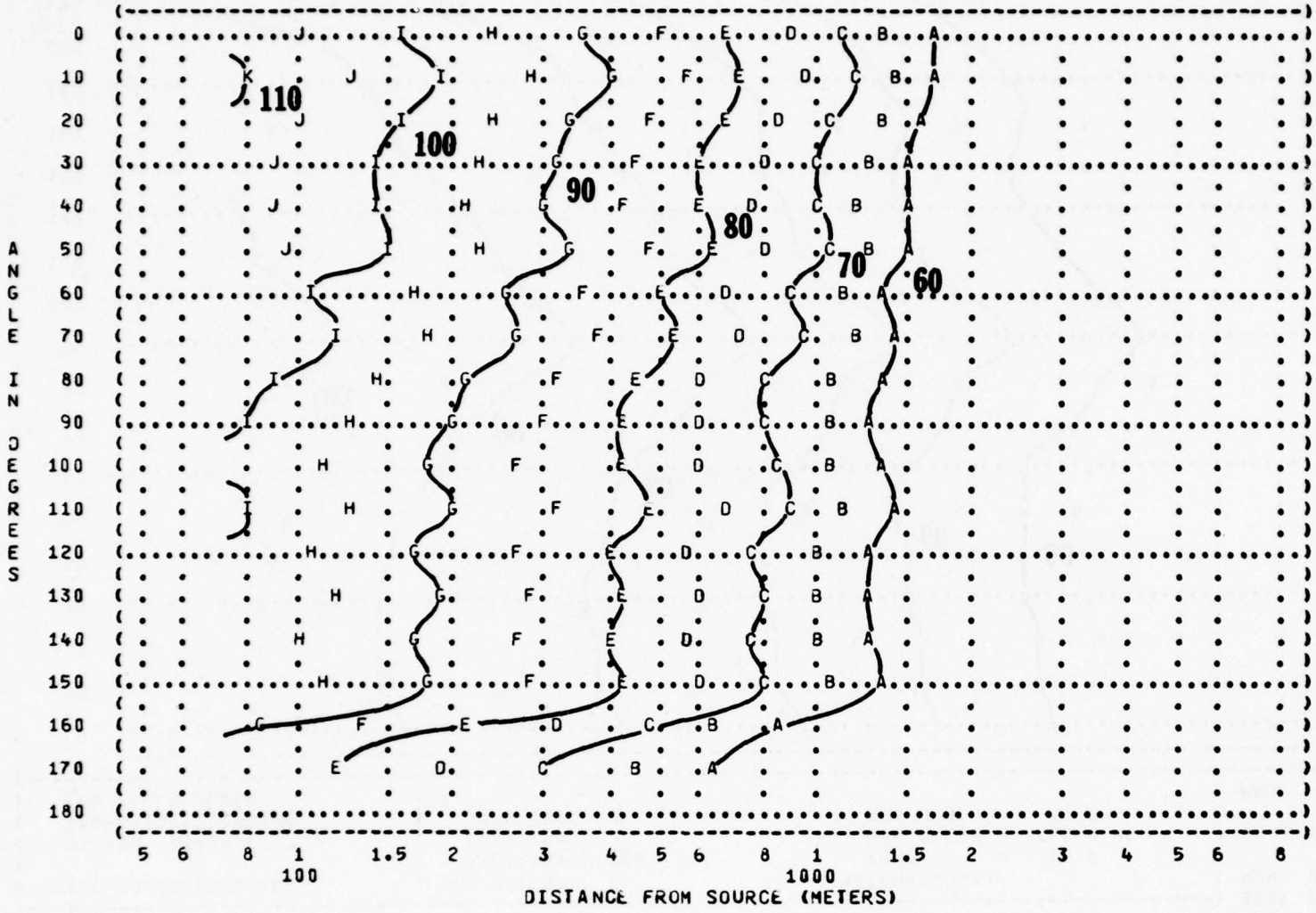


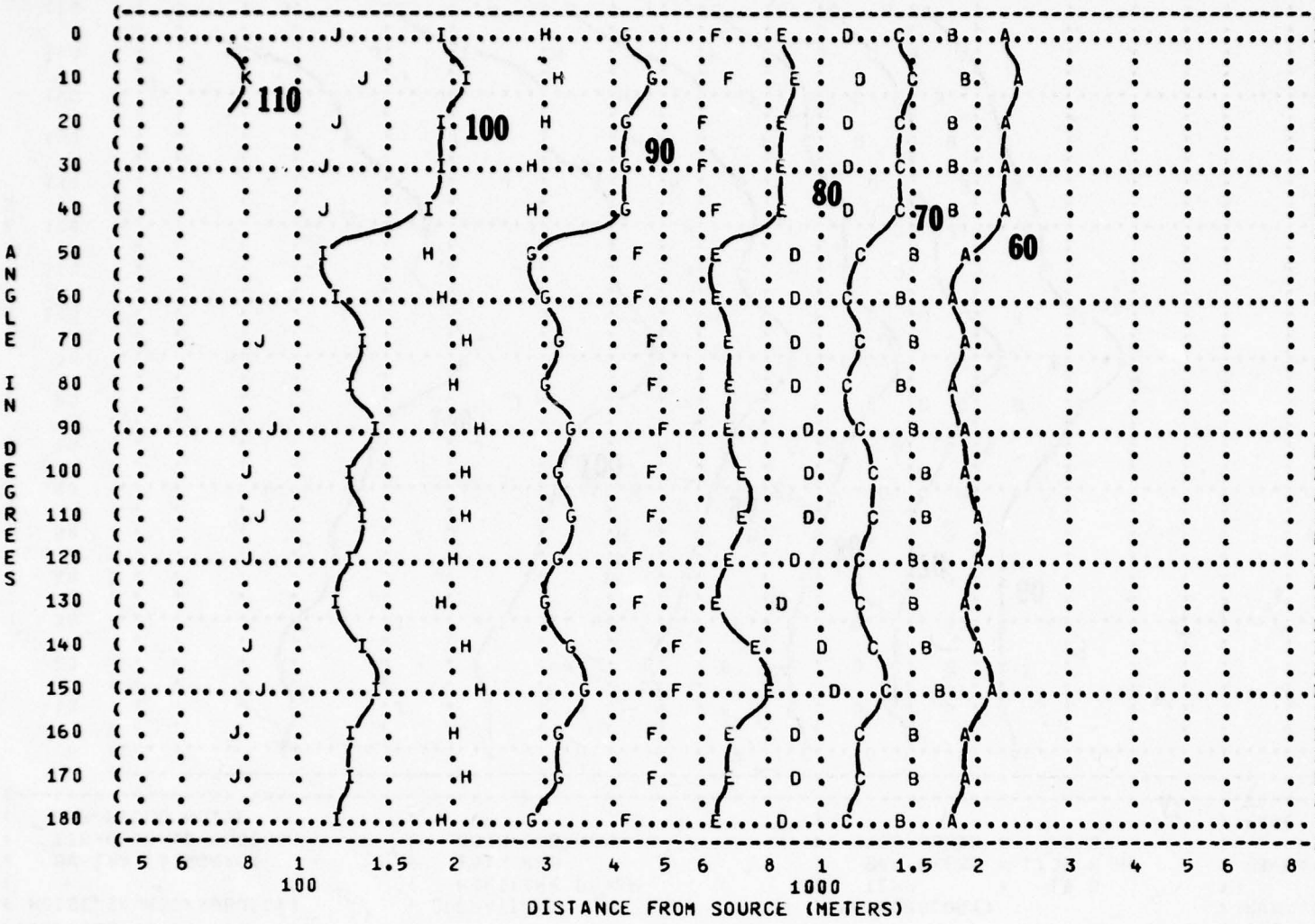
FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 16




| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |
| K | 110 |

FIGURE: 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |
| K | 110 |
| L | 115 |
| M | 120 |

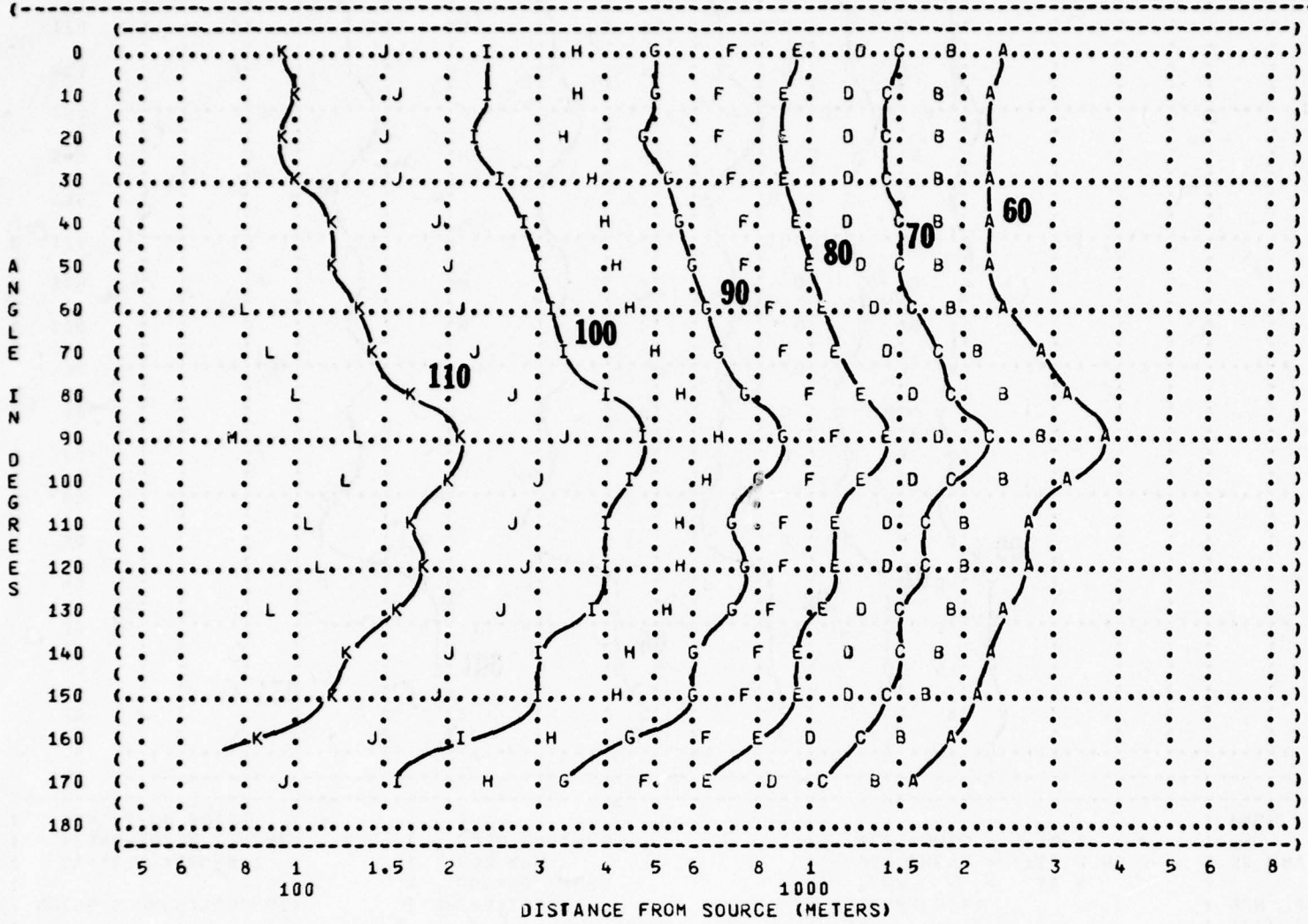


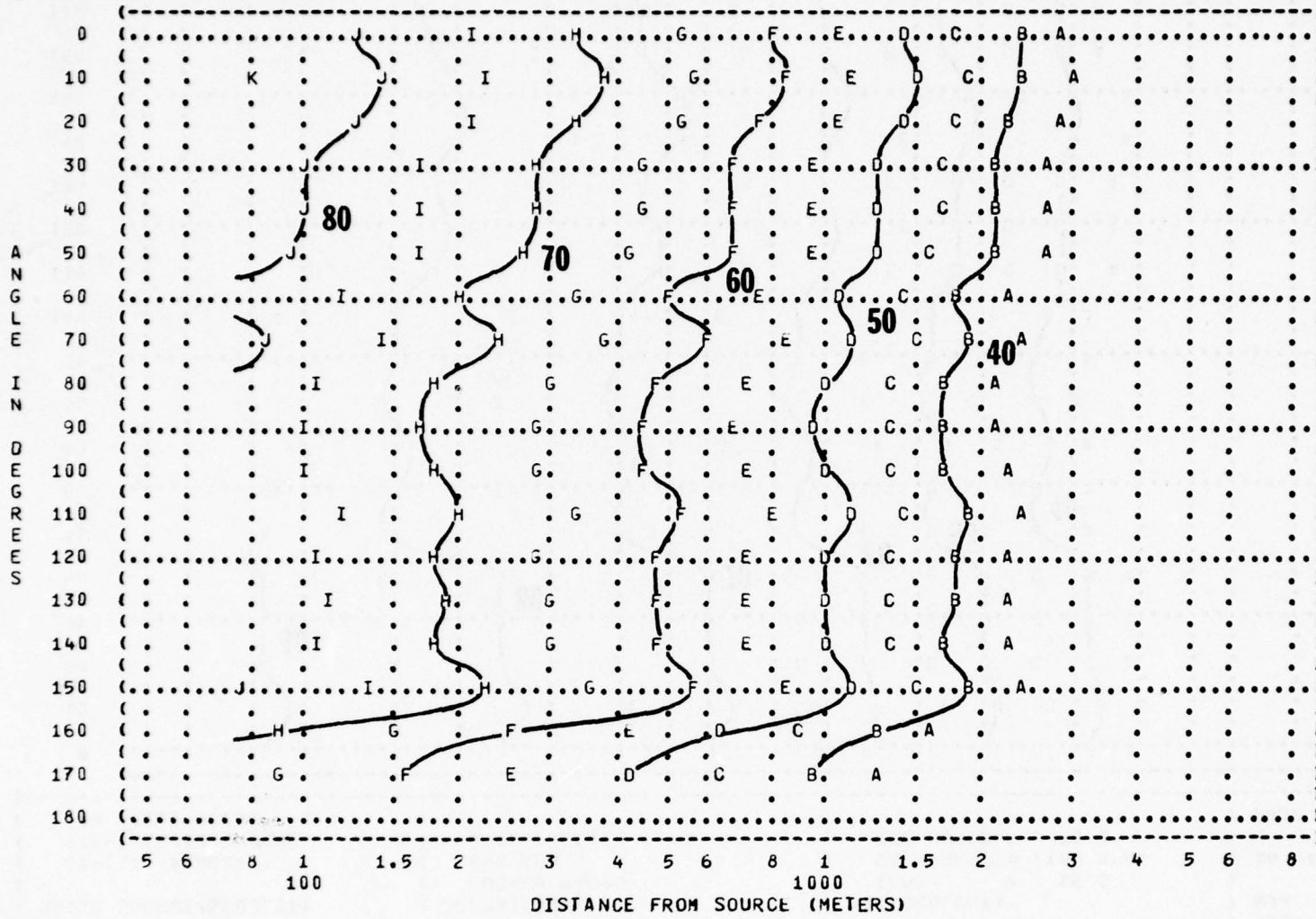
FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

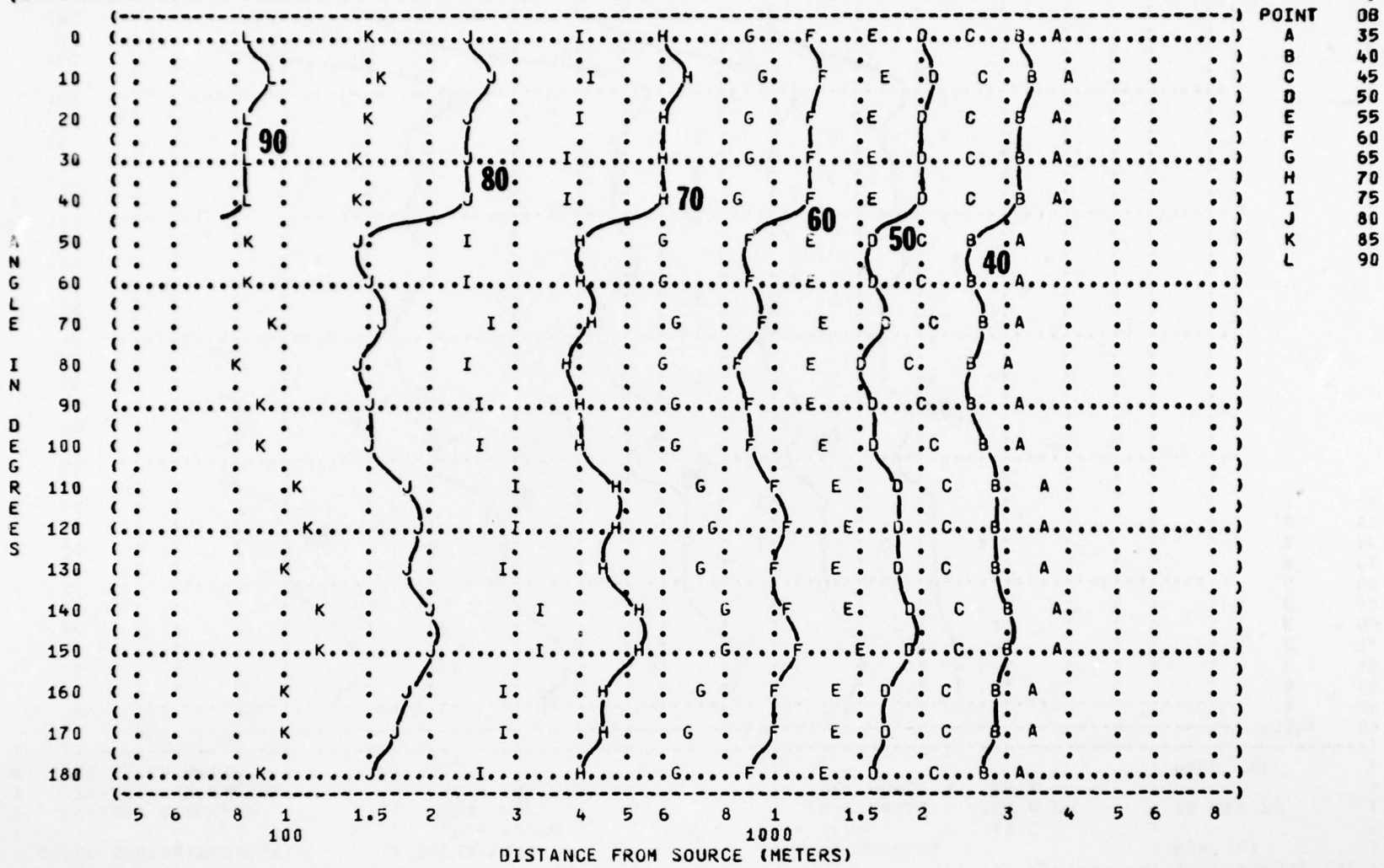
FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 17




POINT 08
A 35
B 40
C 45
D 50
E 55
F 60
G 65
H 70
I 75
J 80
K 85
L 90

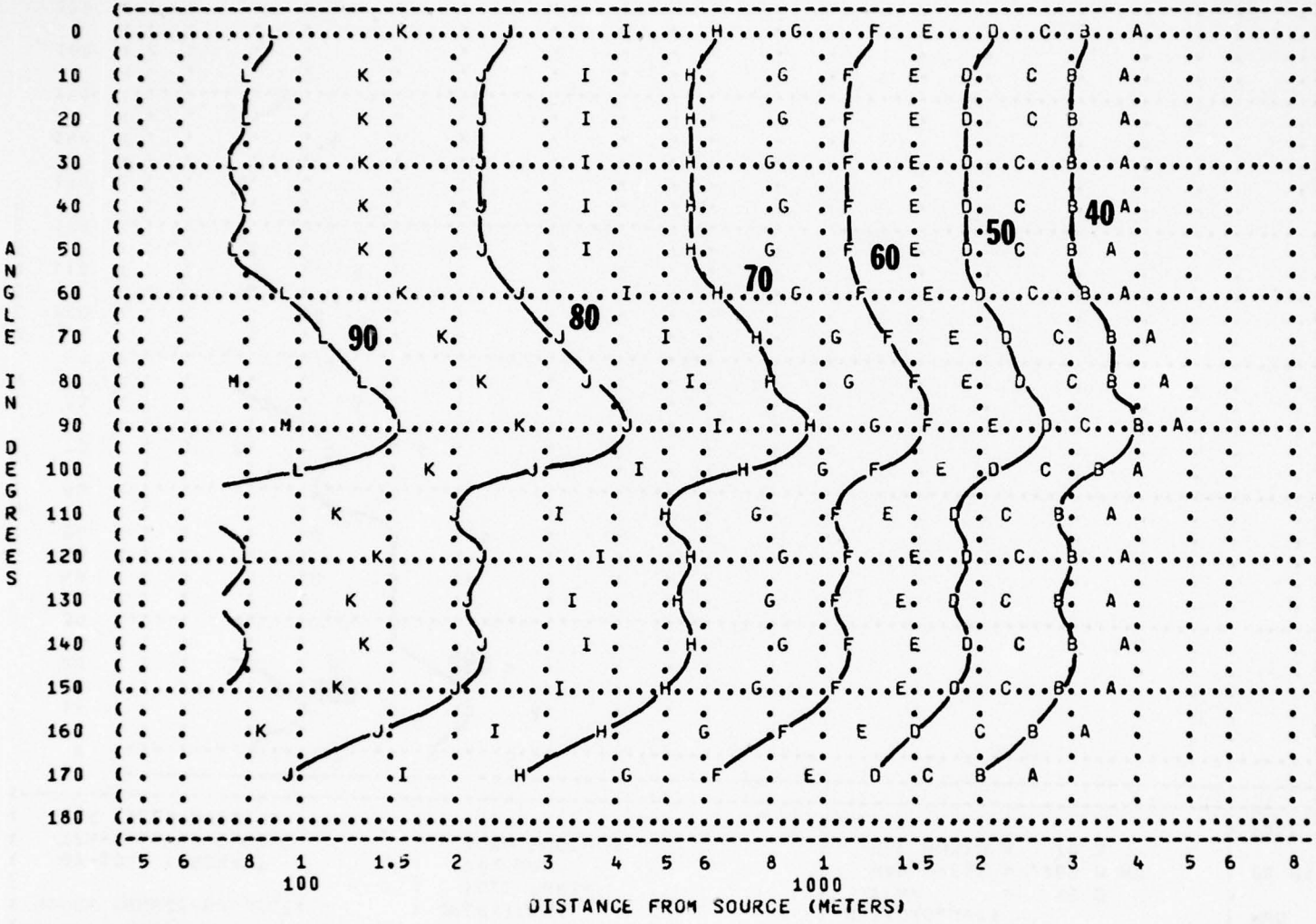
FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 17




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 7

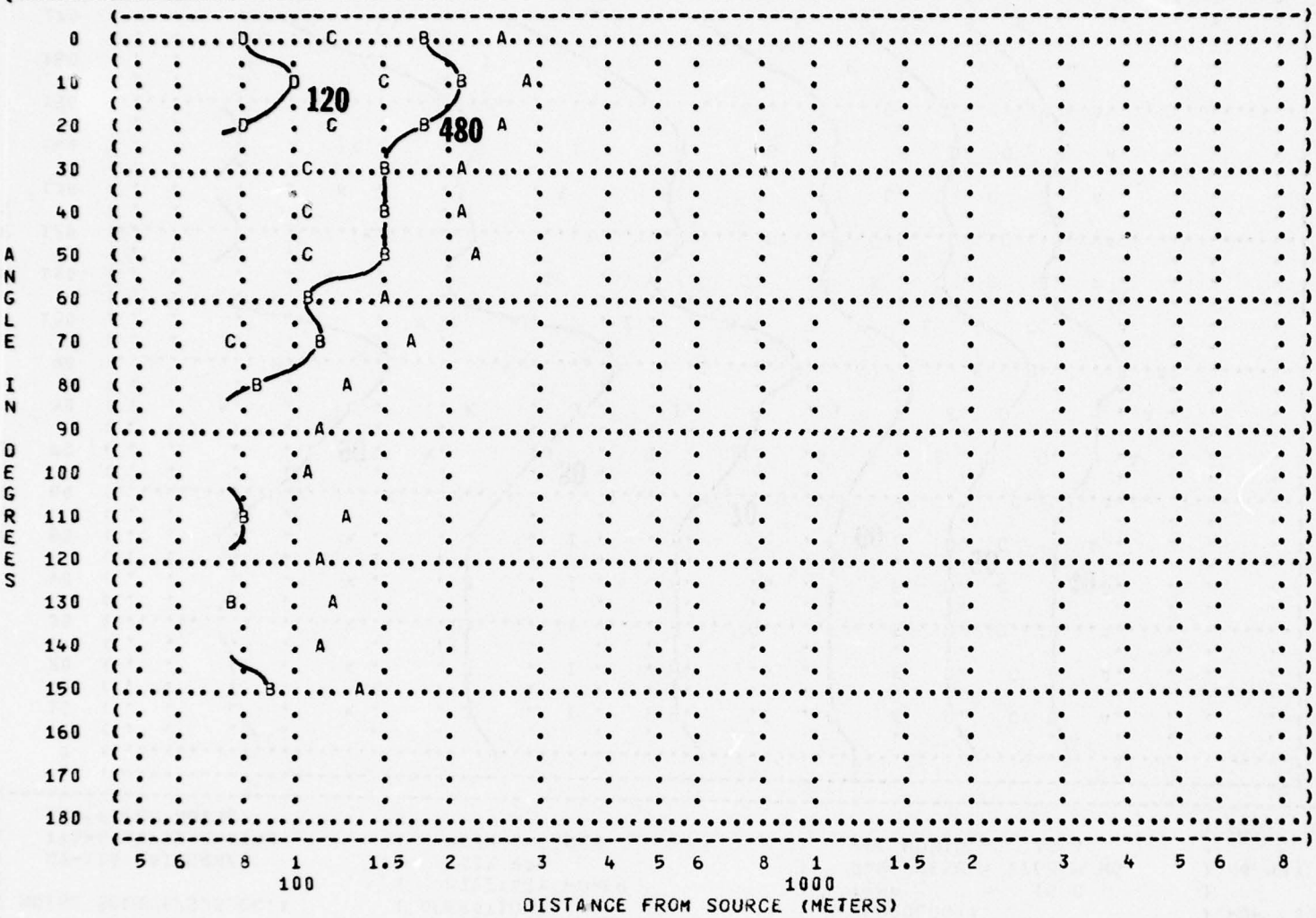


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

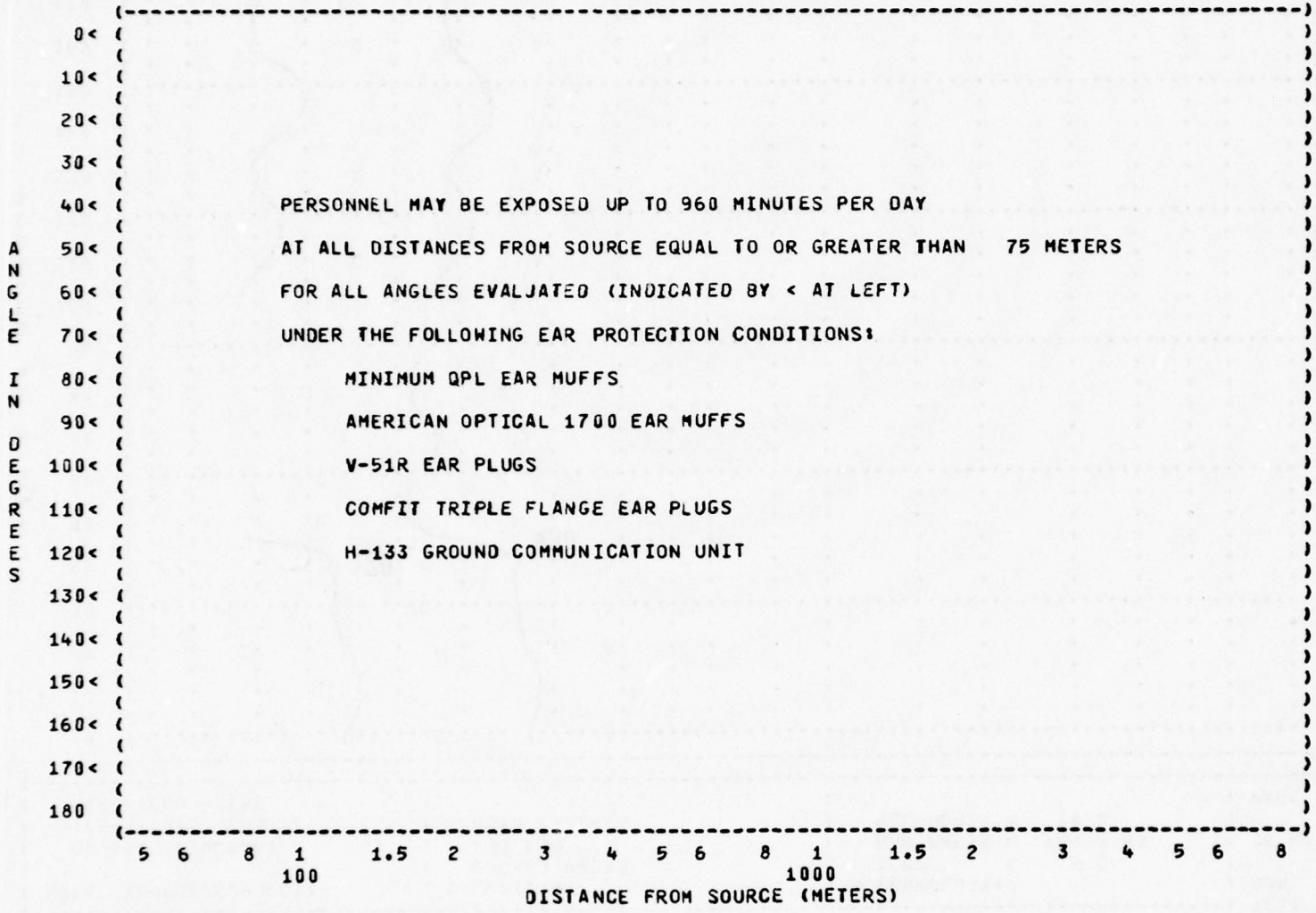


FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JUL 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

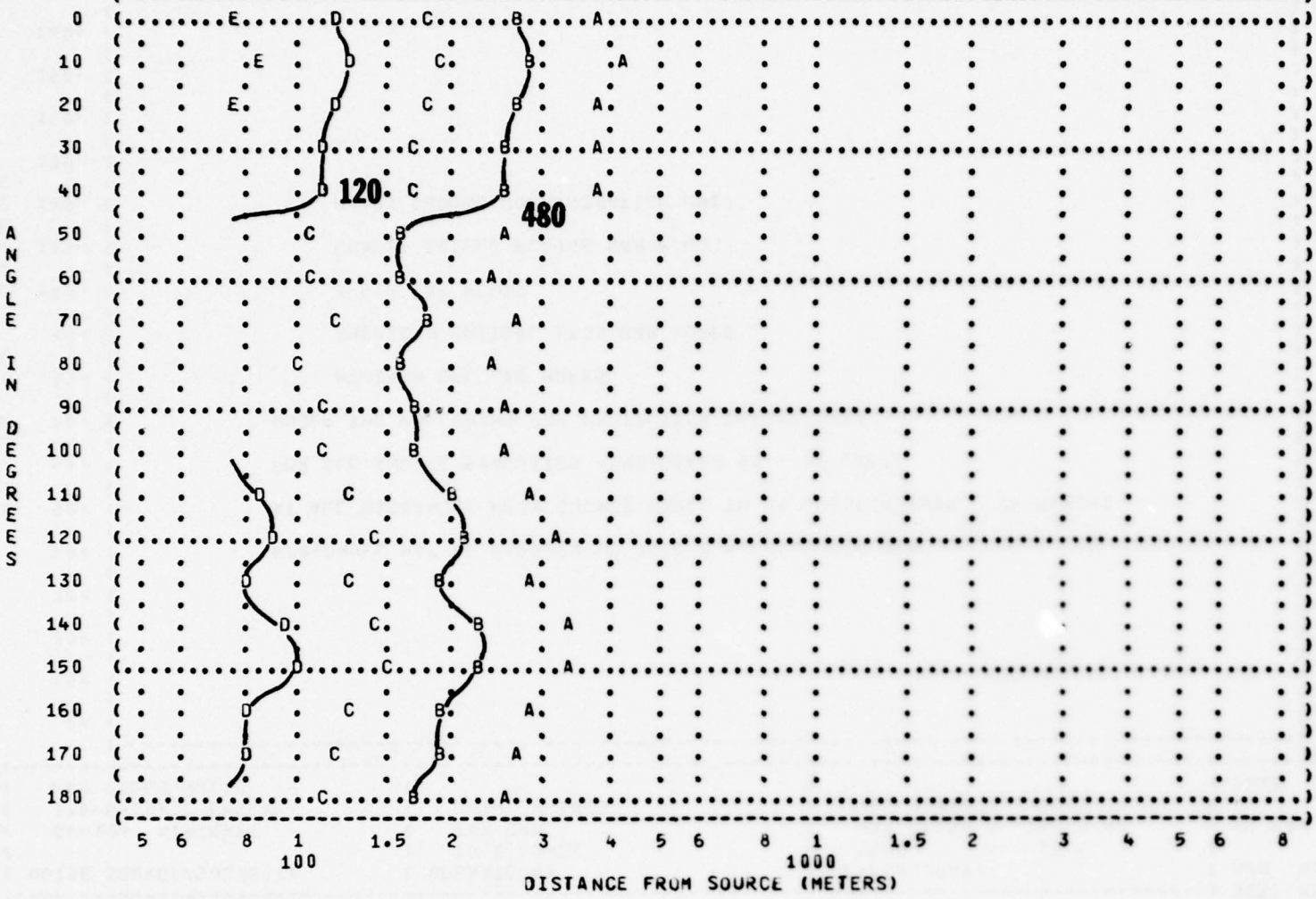
IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |
| D | 120 |
| E | 60 |



| FIGURE: 10 | MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)<br>EQUAL TIME CONTOURS (MINUTES) | IDENTIFICATION: |
|---|---|---|
| NOISE SOURCE/SUBJECT:<br>OV-10A AIRCRAFT<br>T76-G-10/12 ENGINE<br>FAR FIELD NOISE | OPERATION:<br>LOCKED PROPS<br>89% RPM<br>BOTH ENGINES | METEOROLOGY:<br>TEMP = 15 C<br>BAR PRESS = .760 M HG<br>REL HUMID = 70 % | OMEGA 1.4<br>TEST 75-002-040<br>RUN 02<br>08 MAY 75<br>PAGE 8 |

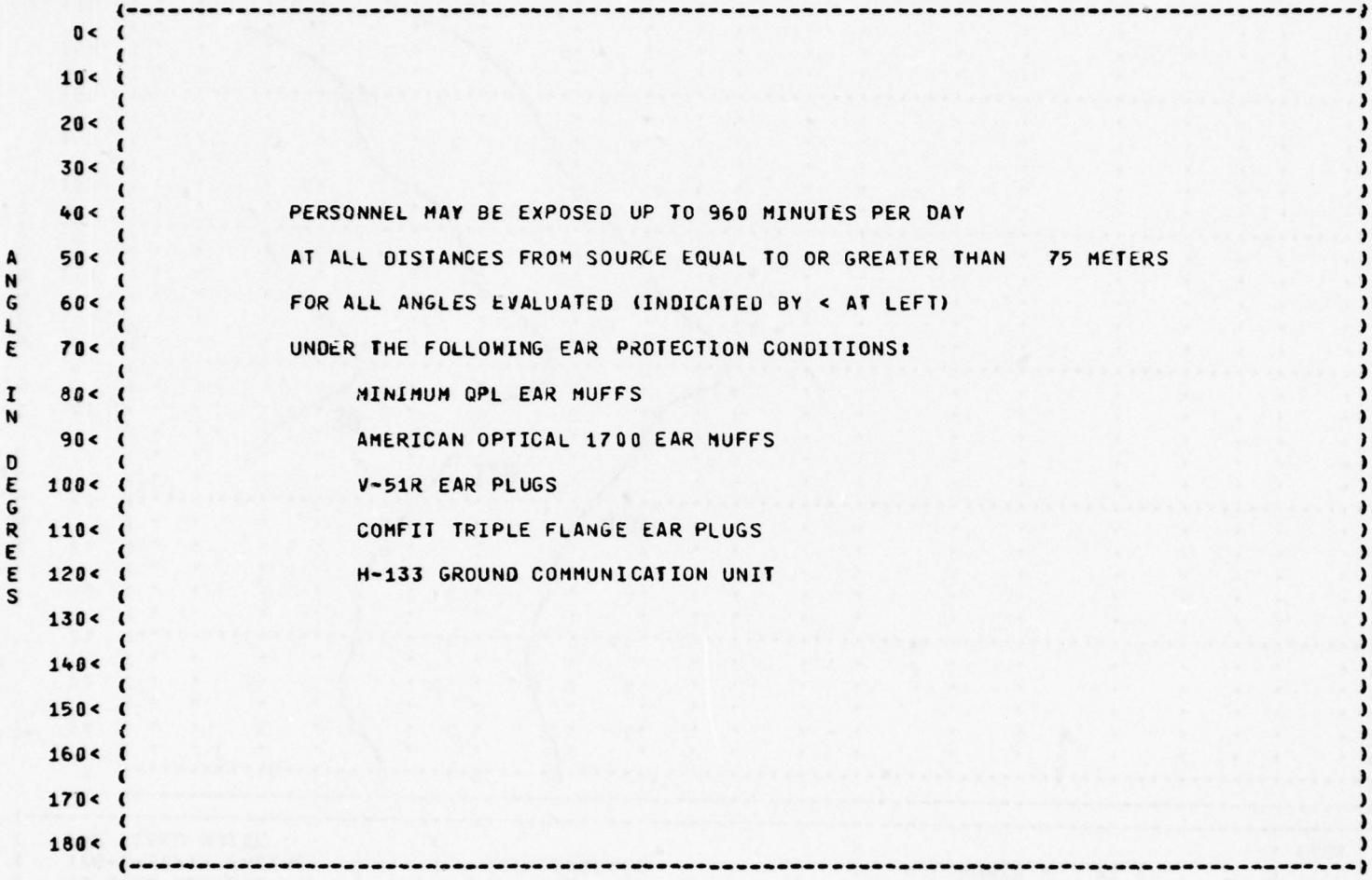


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |
| D | 120 |
| E | 60 |
| F | 30 |
| G | 15 |

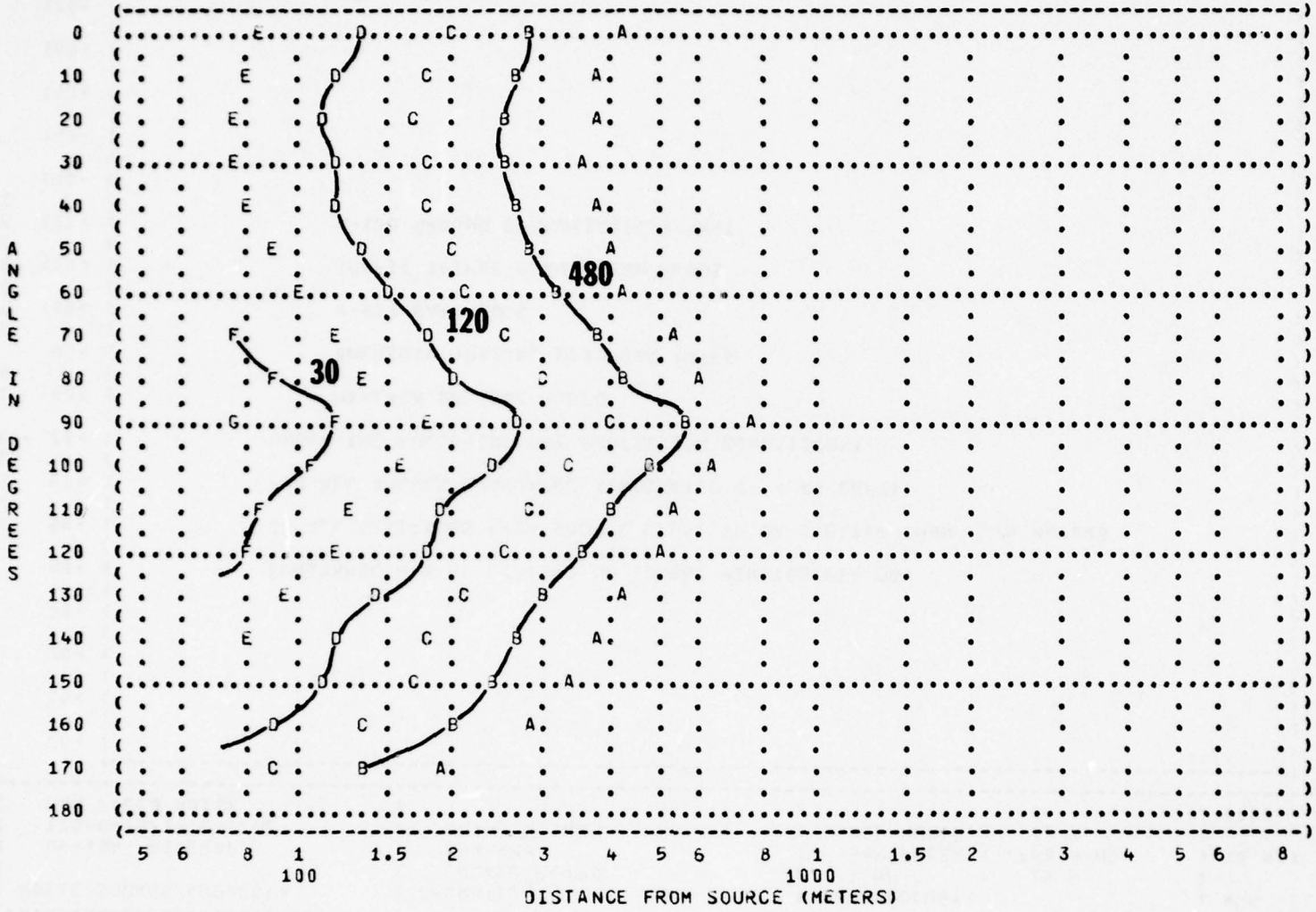


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 8

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |

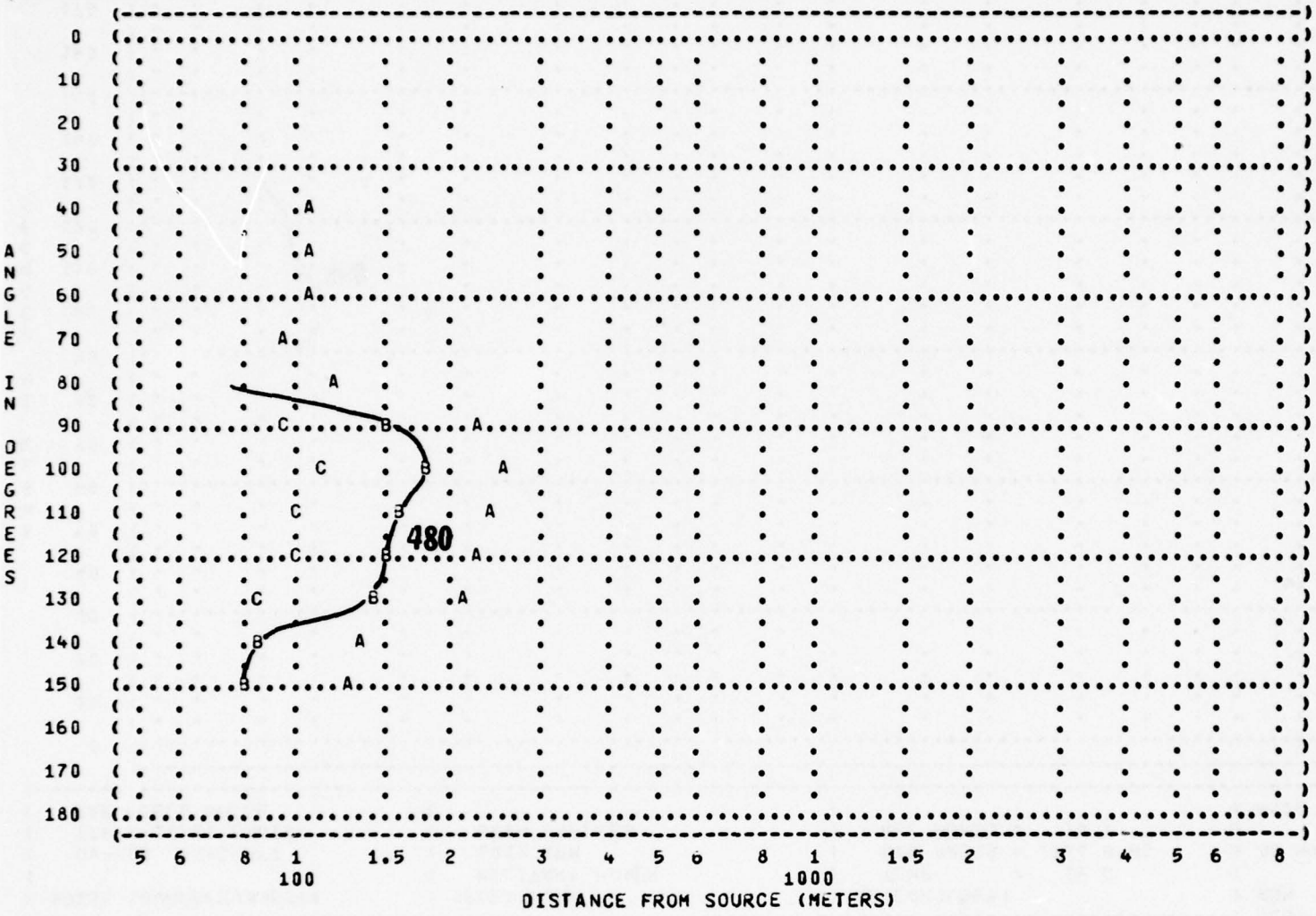


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 9

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |

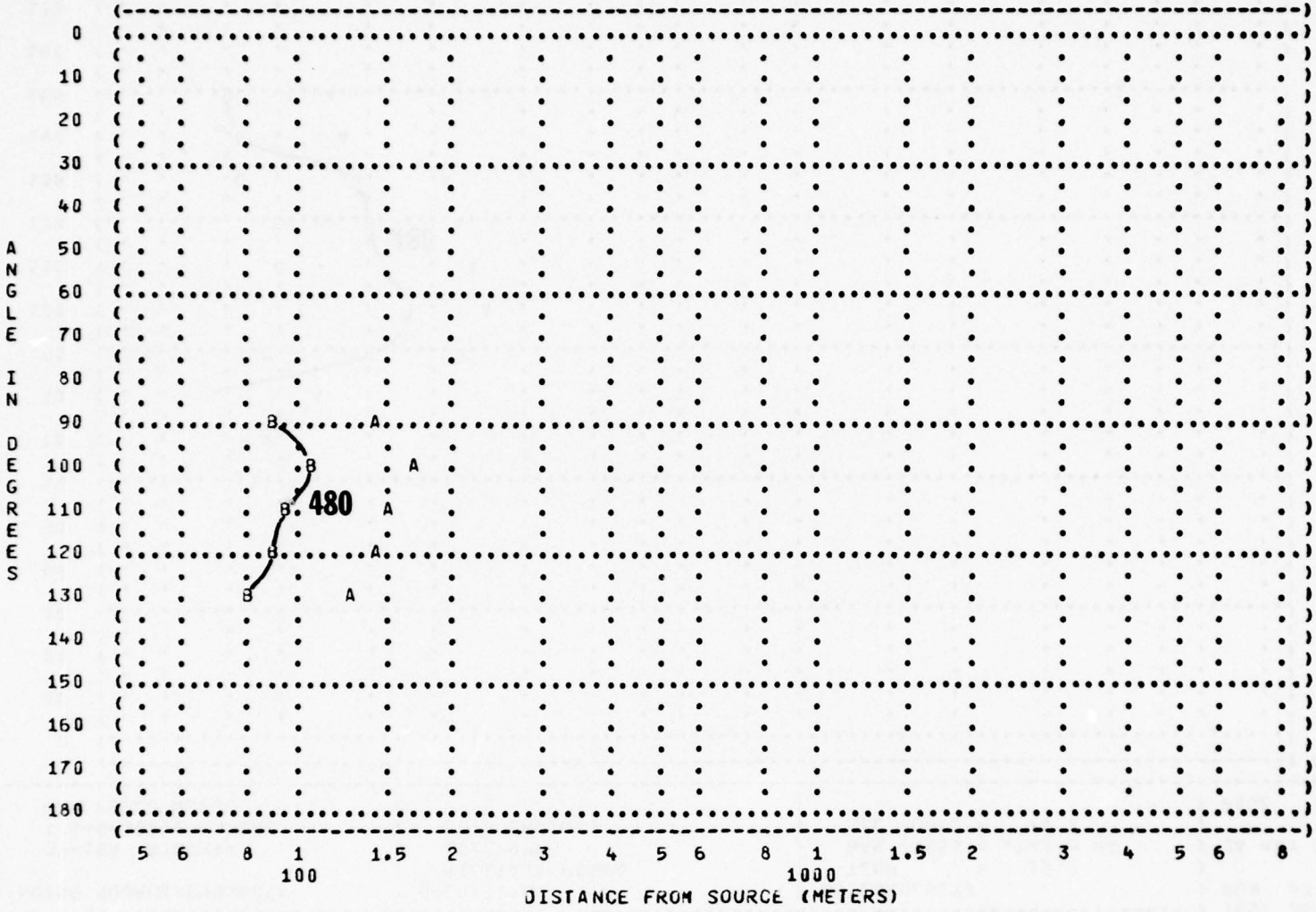


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 10

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | MIN |
|---|---|
| A | 960 |

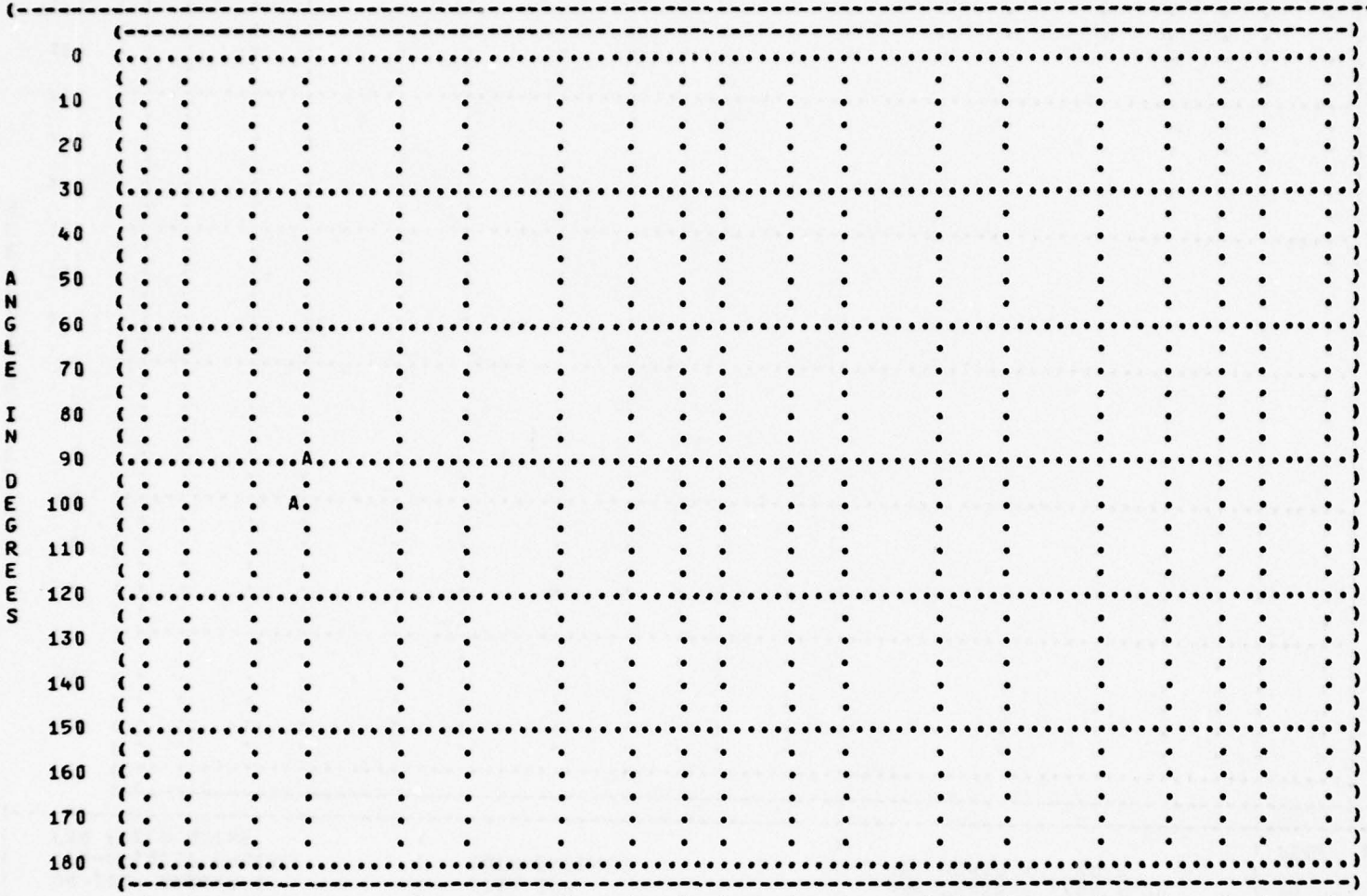


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 11

POINT MIN
A 960

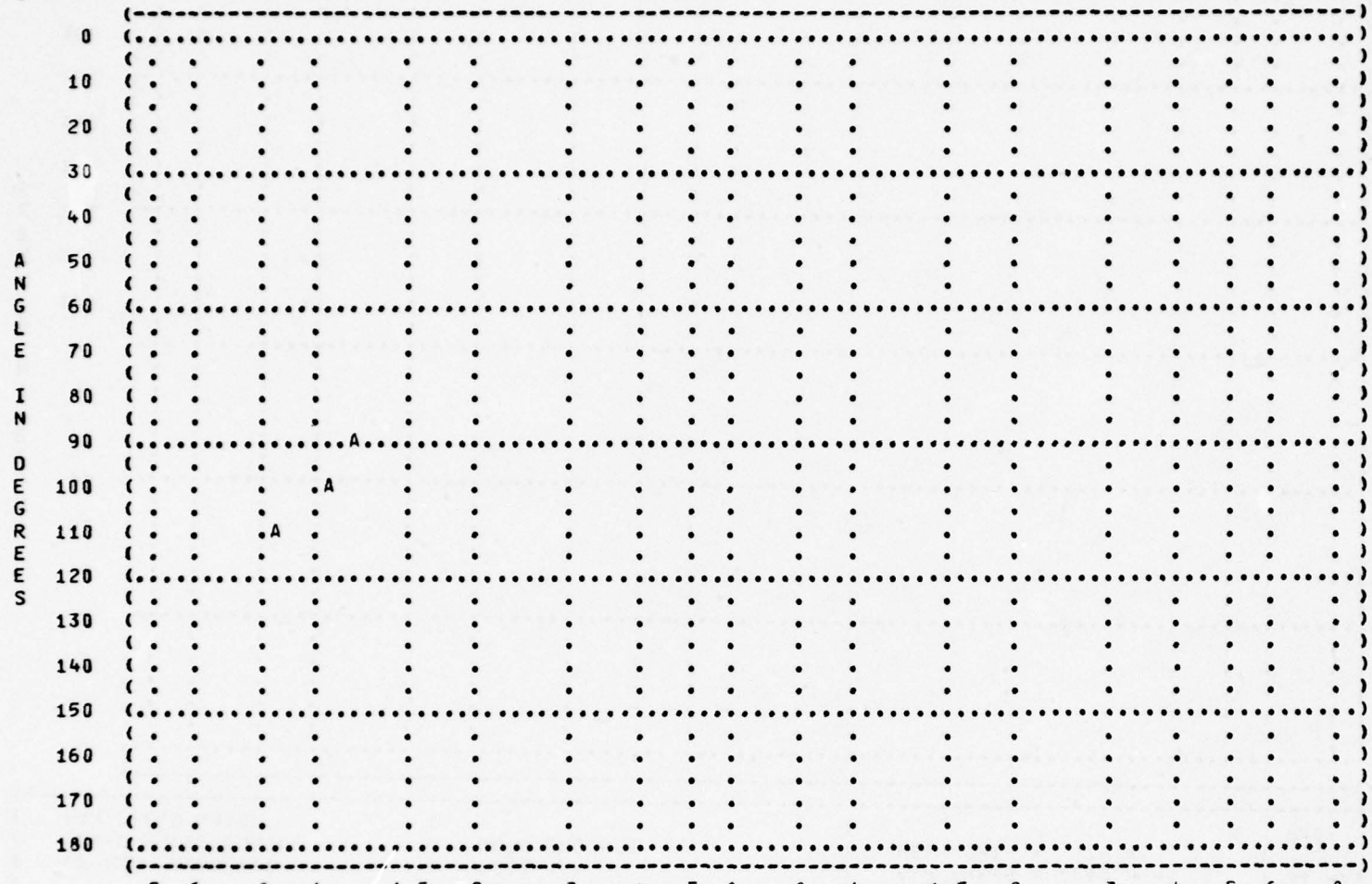


FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 12

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

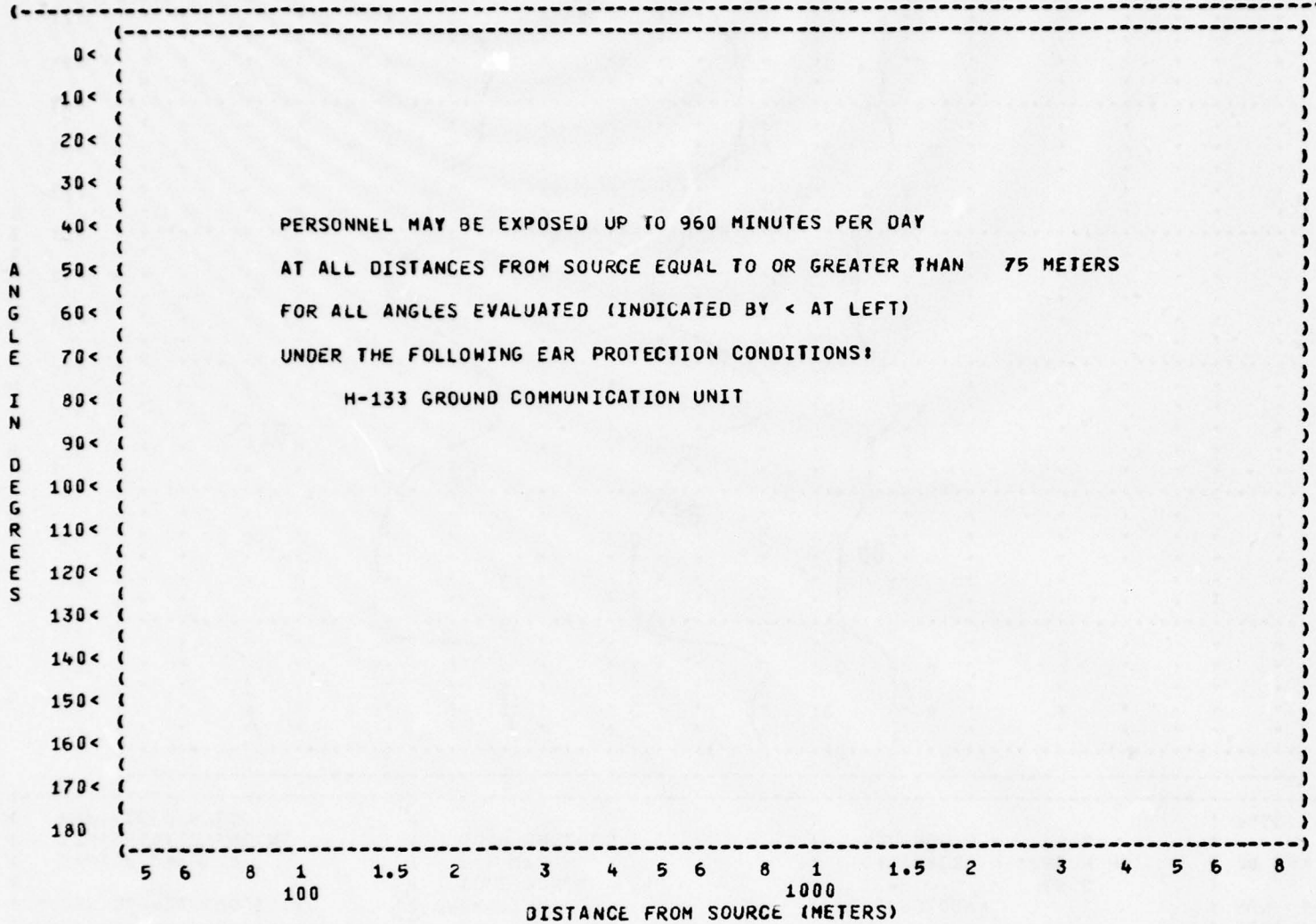


FIGURE: 11

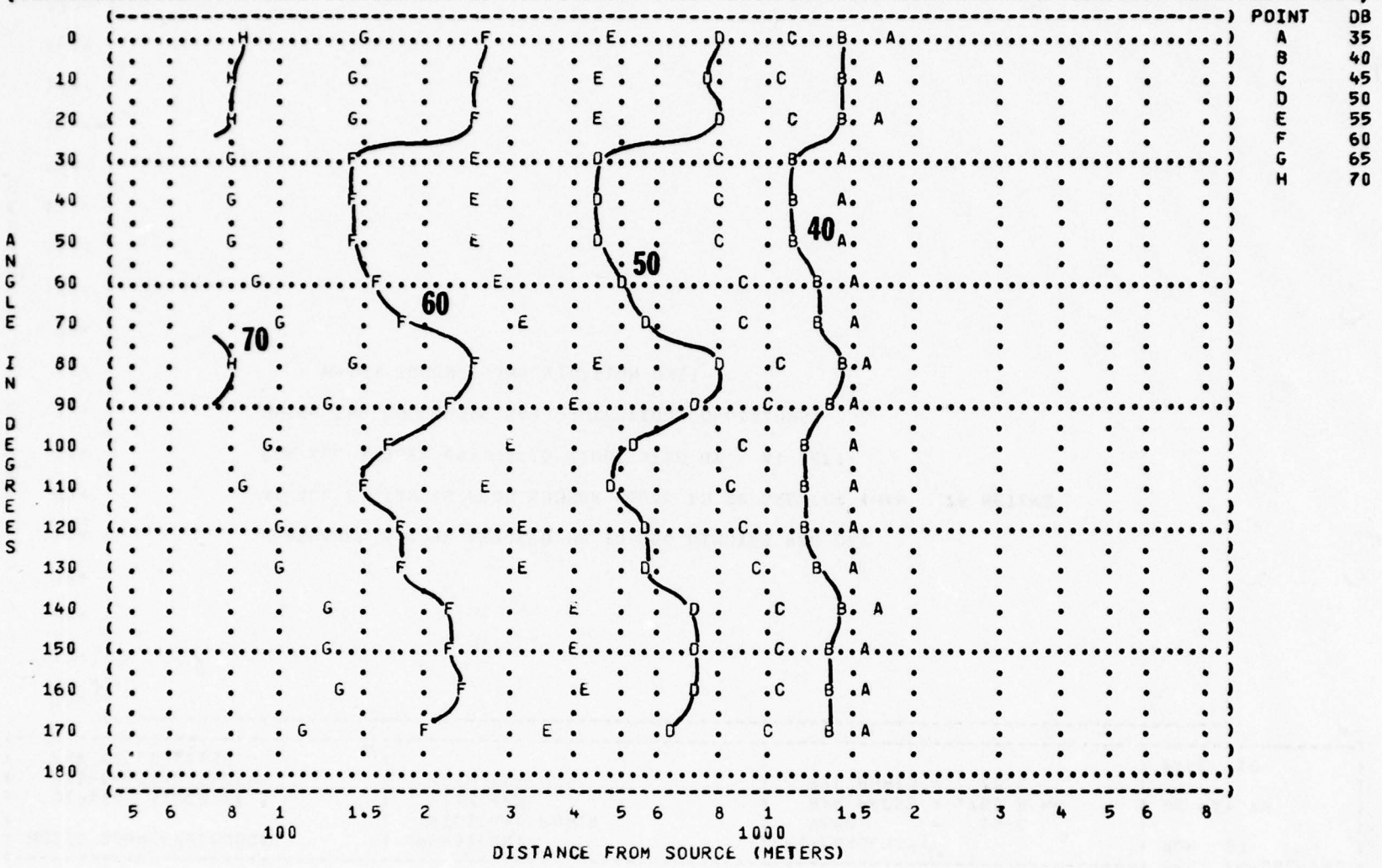
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 18




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 19

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

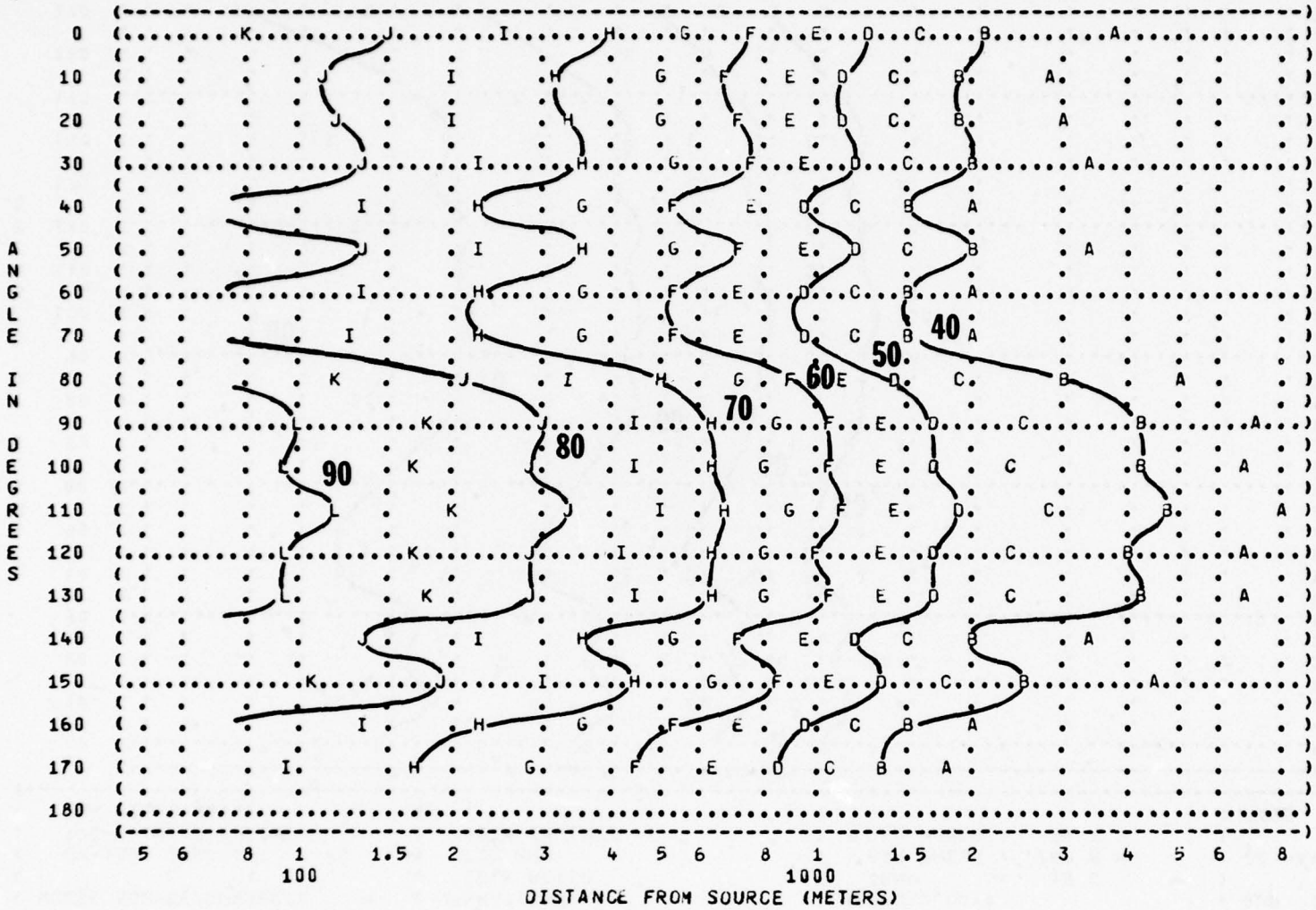


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 20

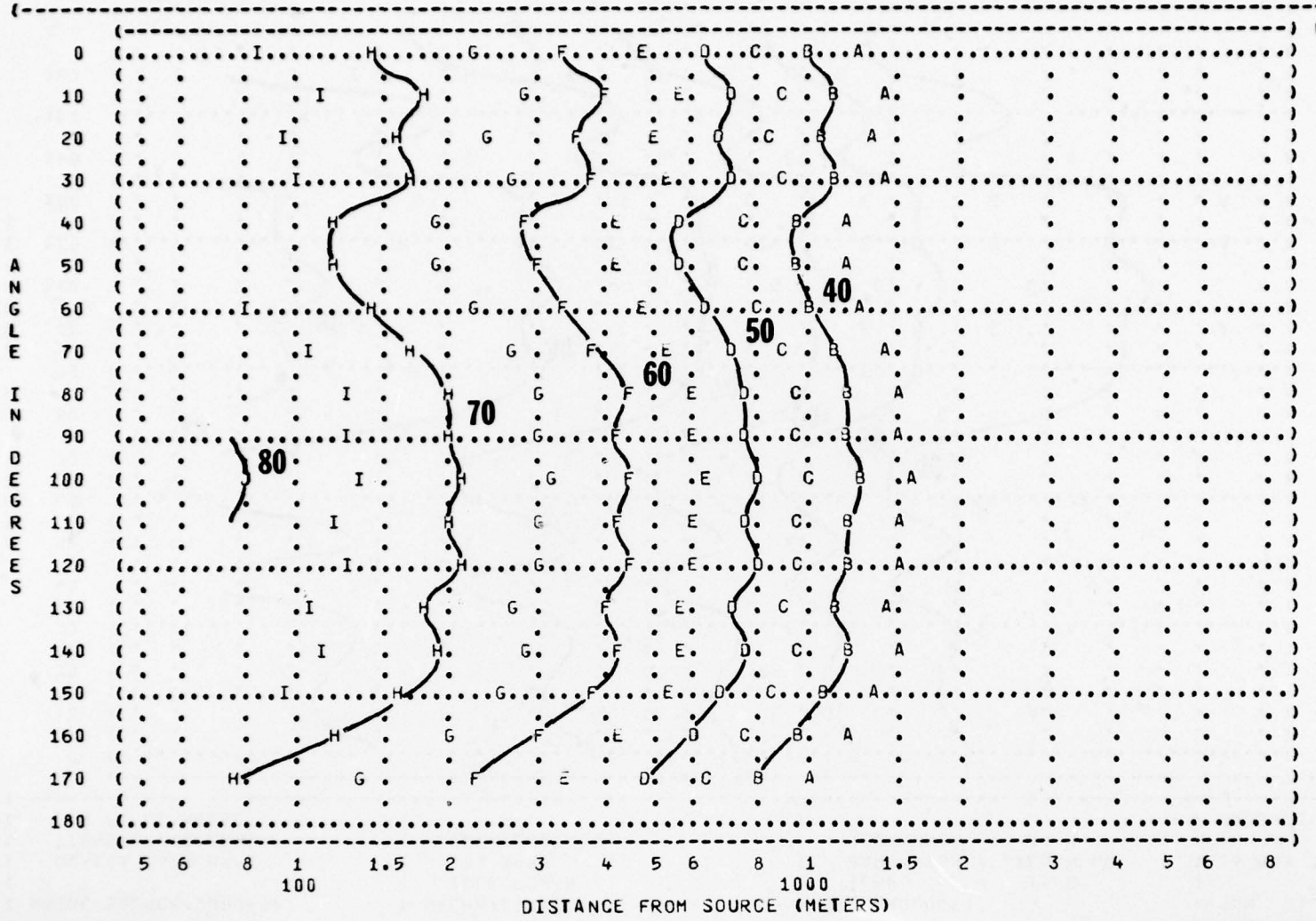


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 21

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

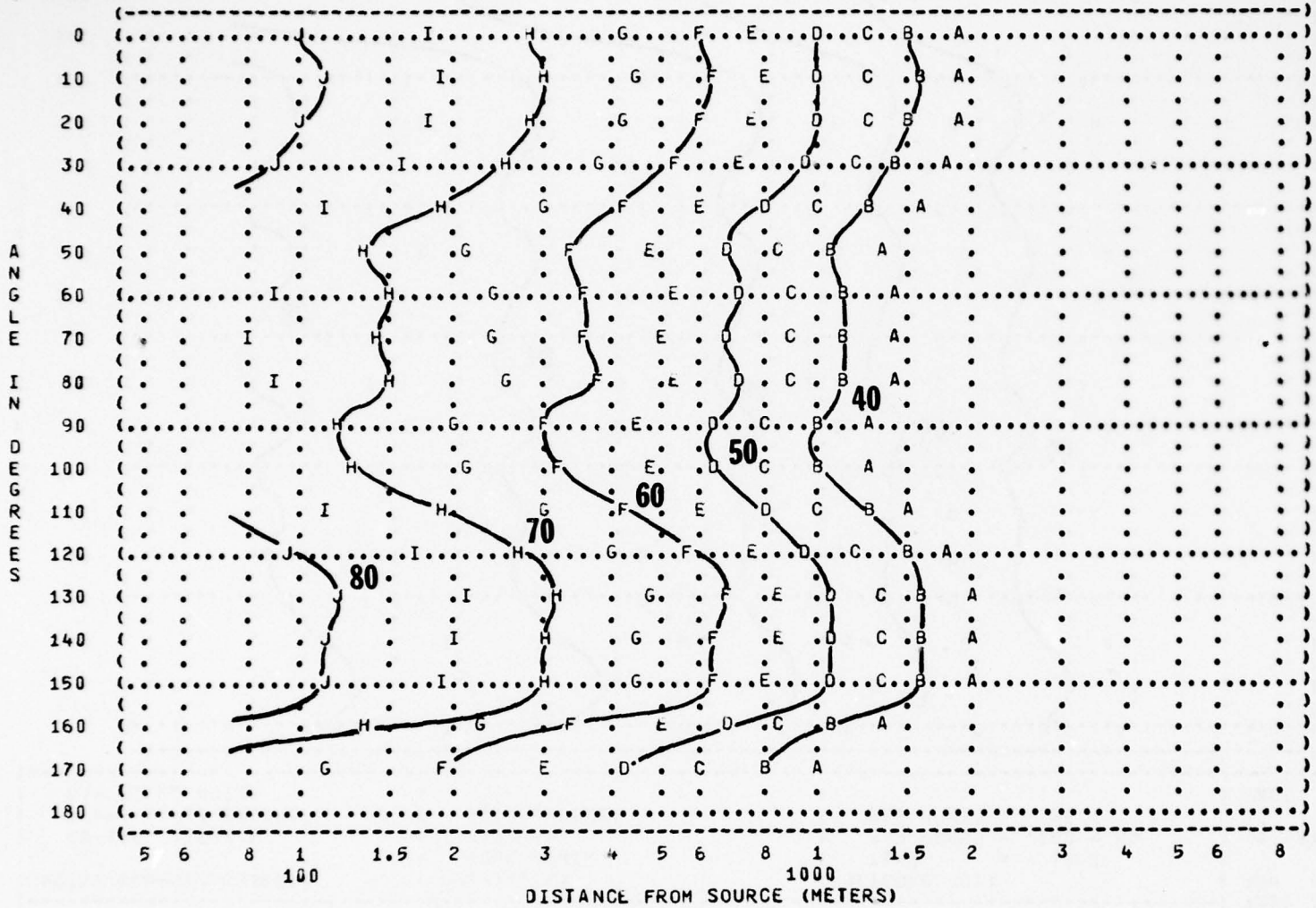


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 22

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

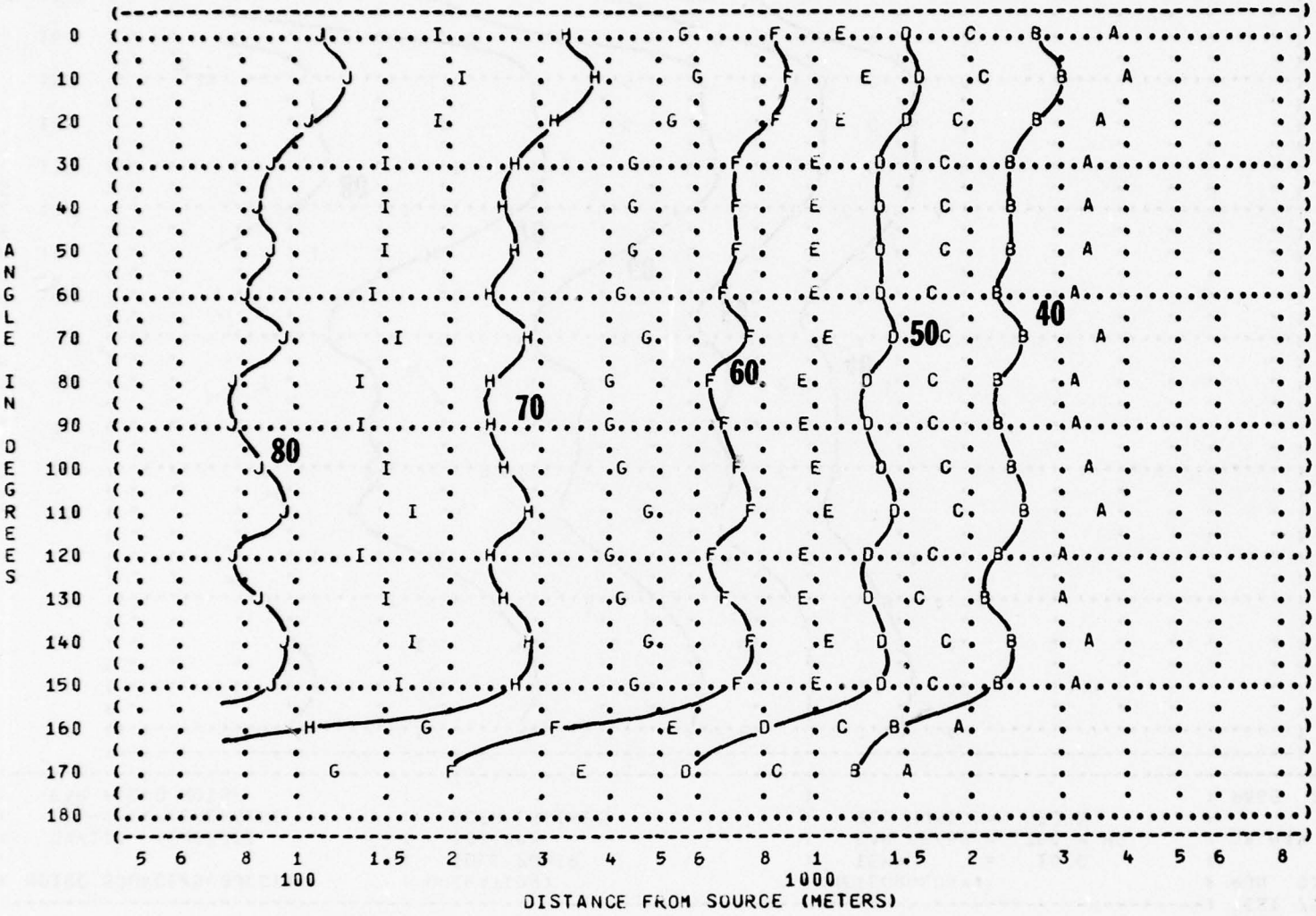


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 23

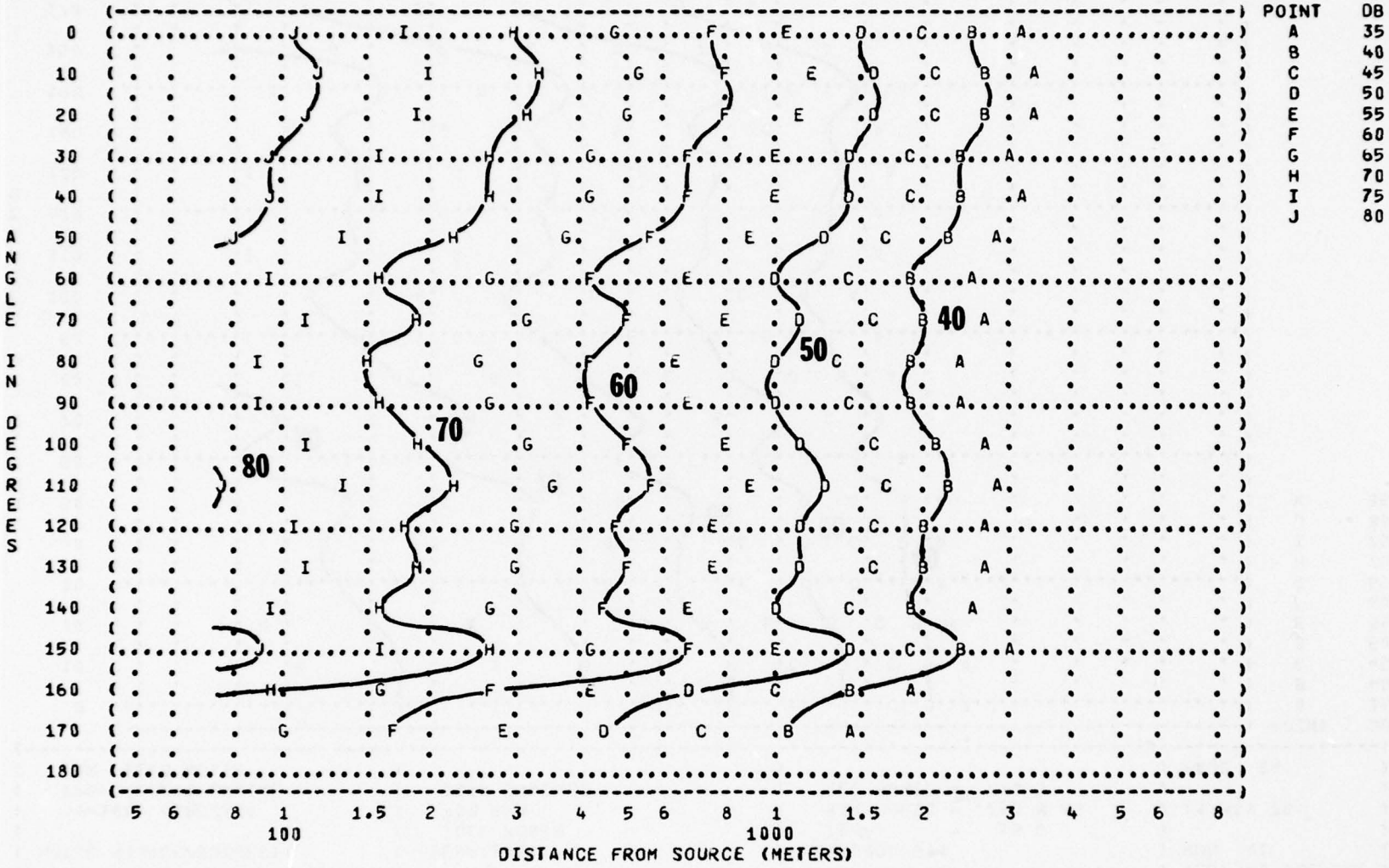


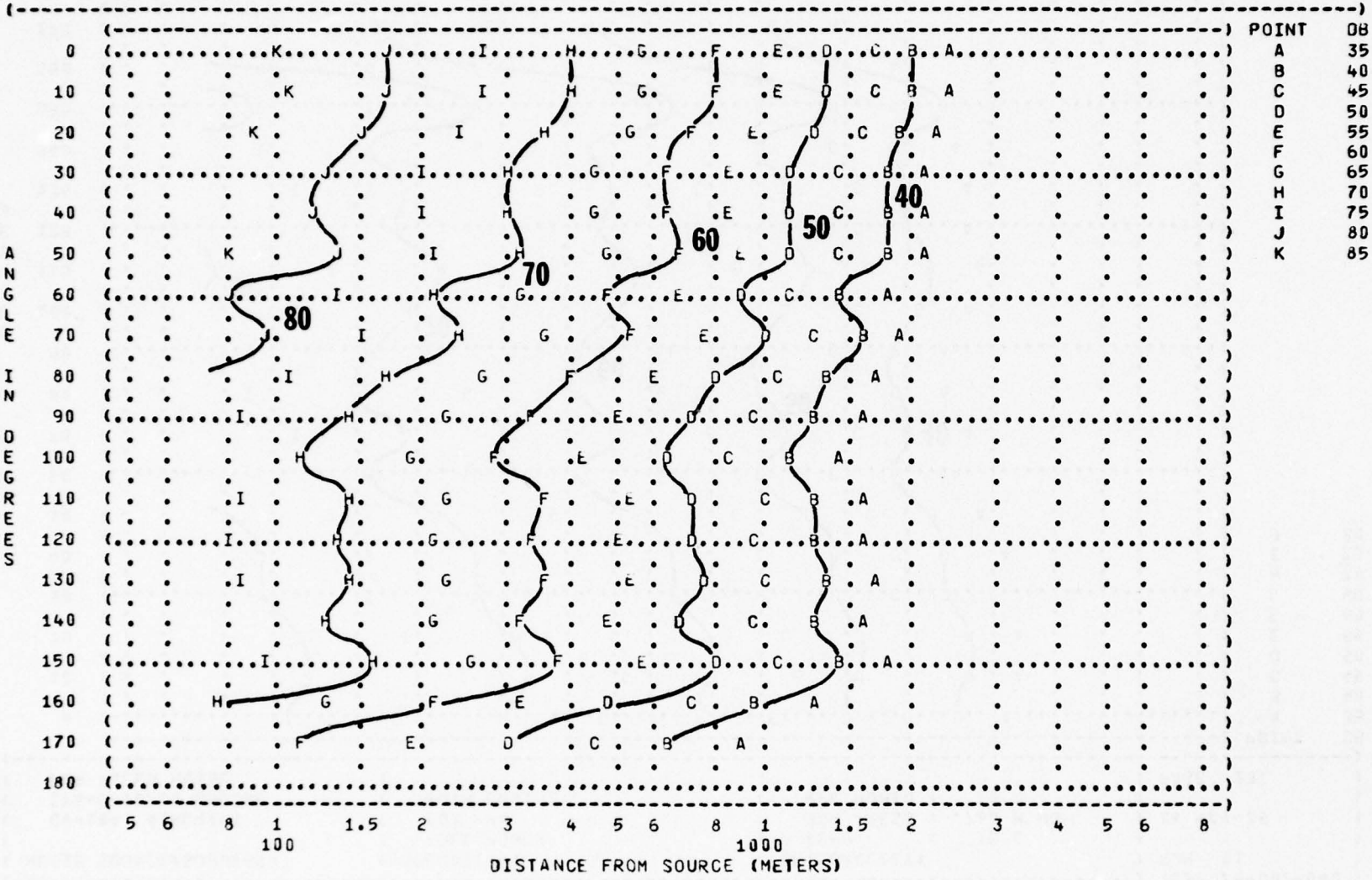
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 24




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

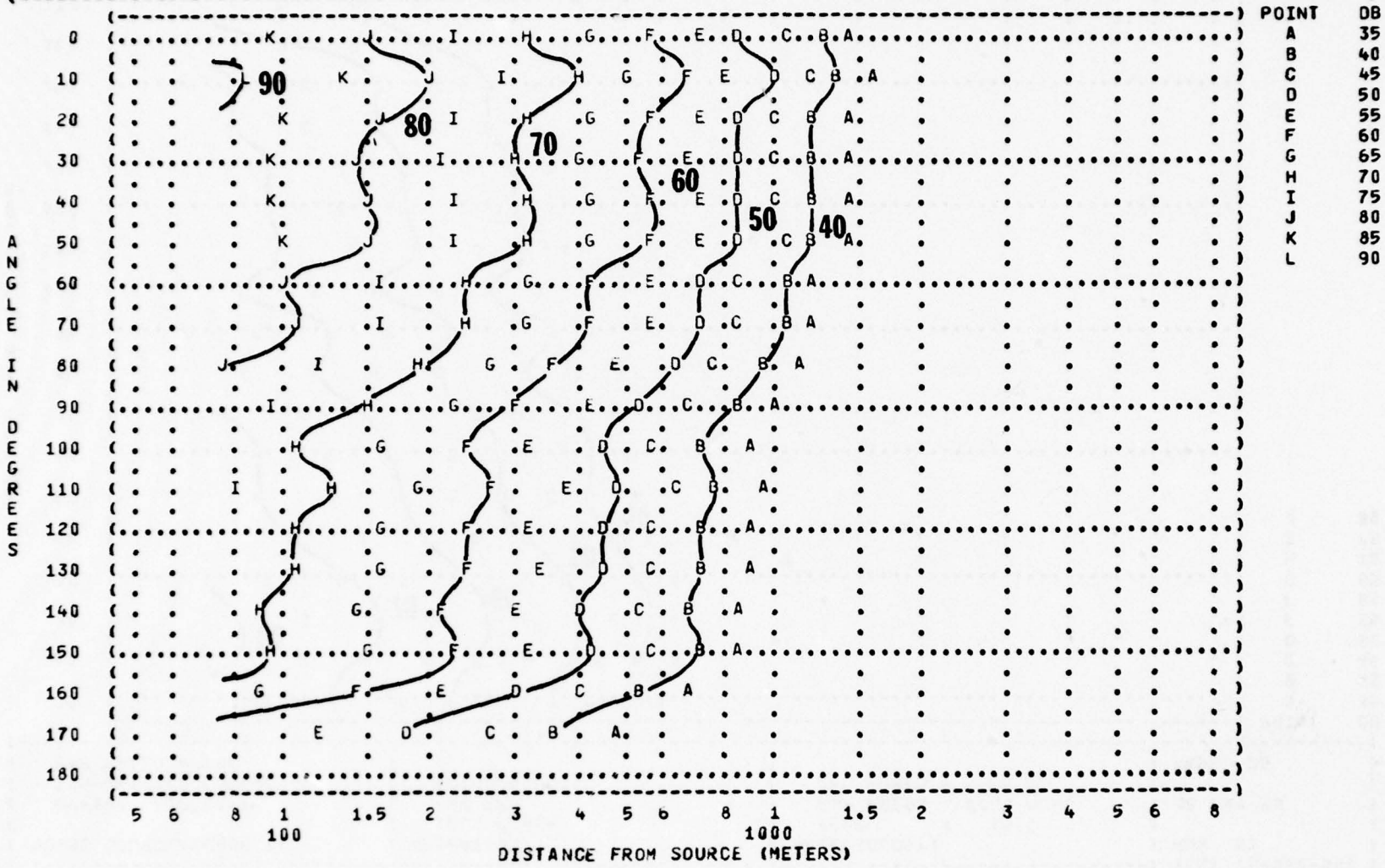
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 25




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

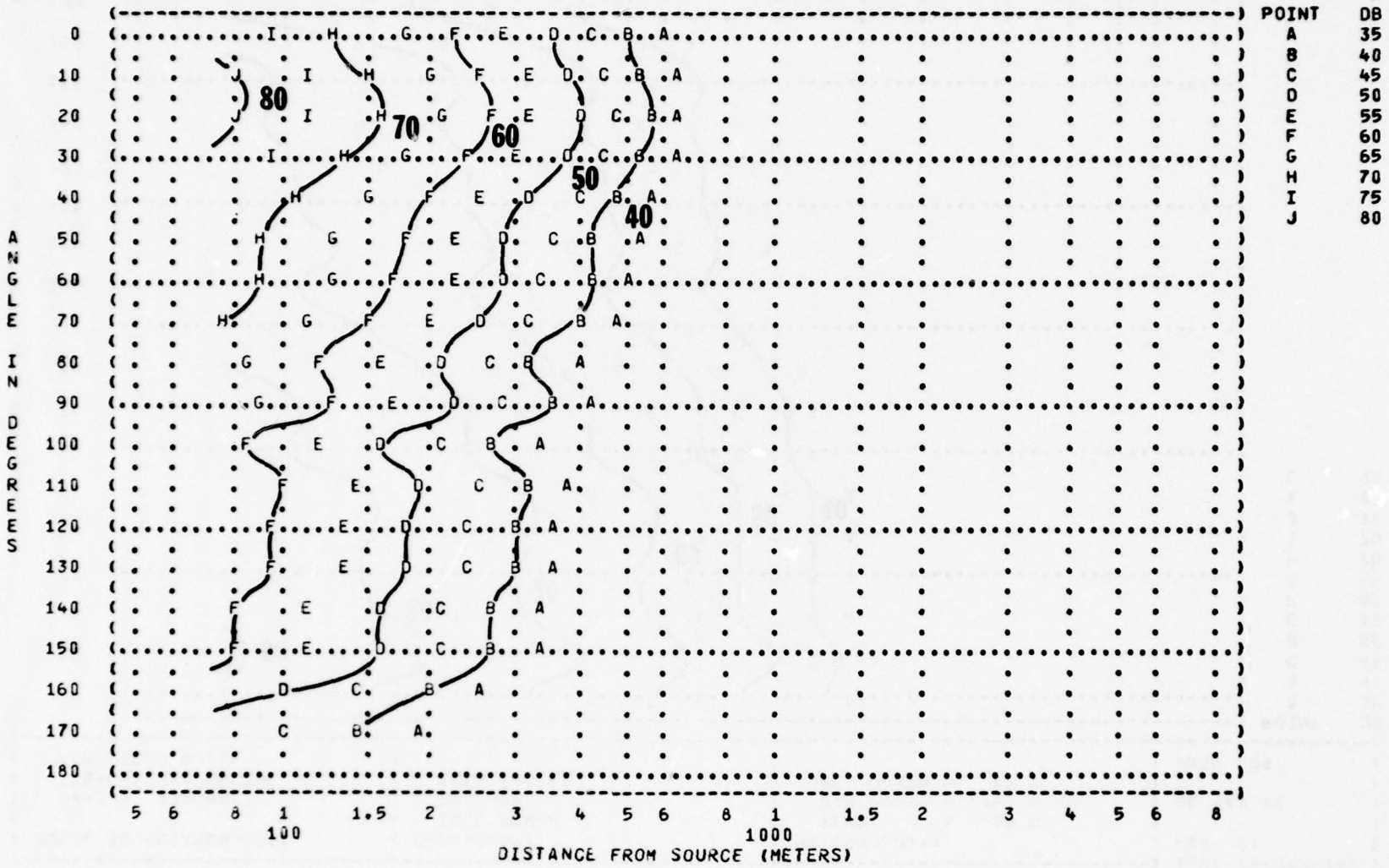
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
70% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 01
08 MAY 75
PAGE 26




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

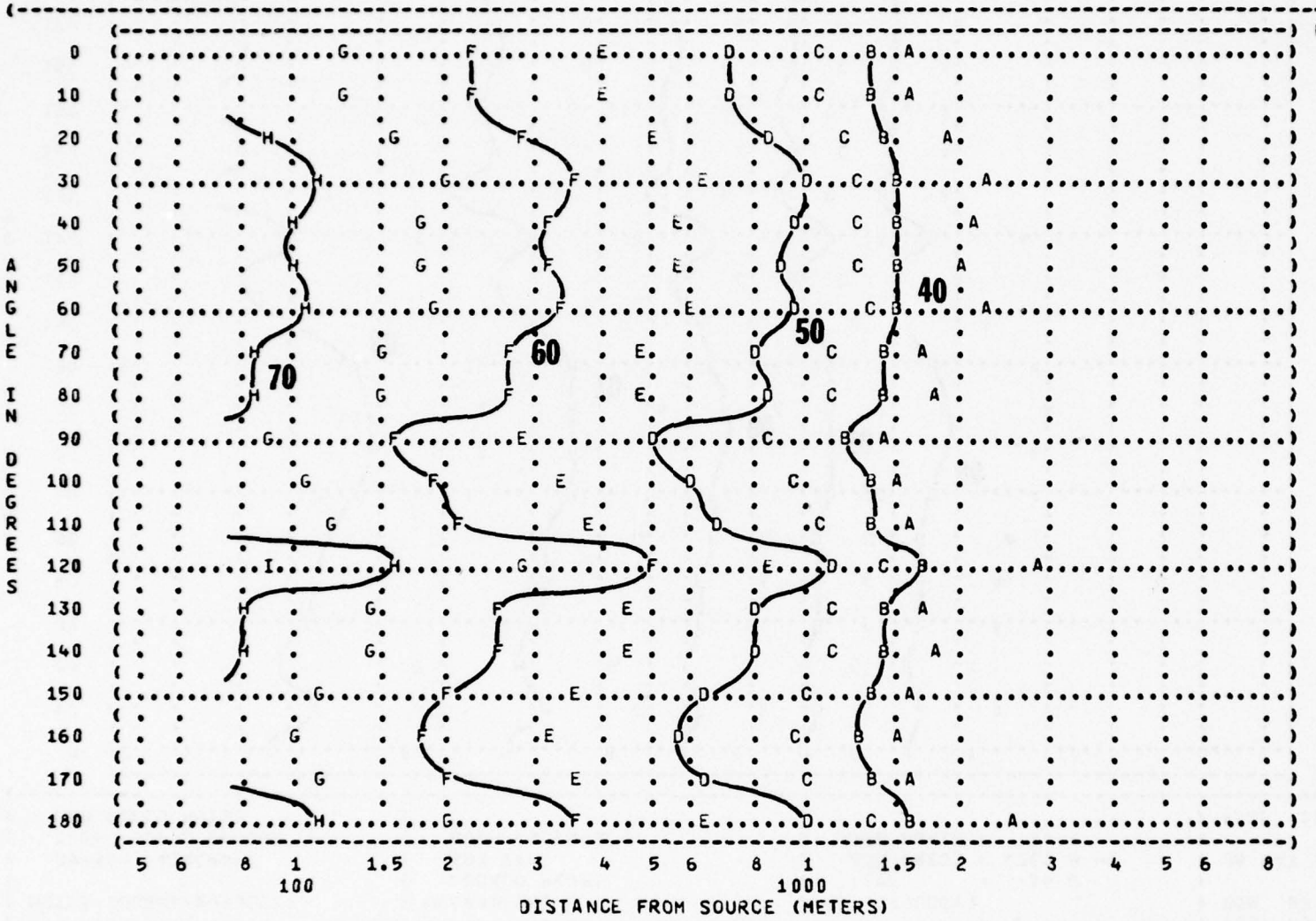
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 18

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 19

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

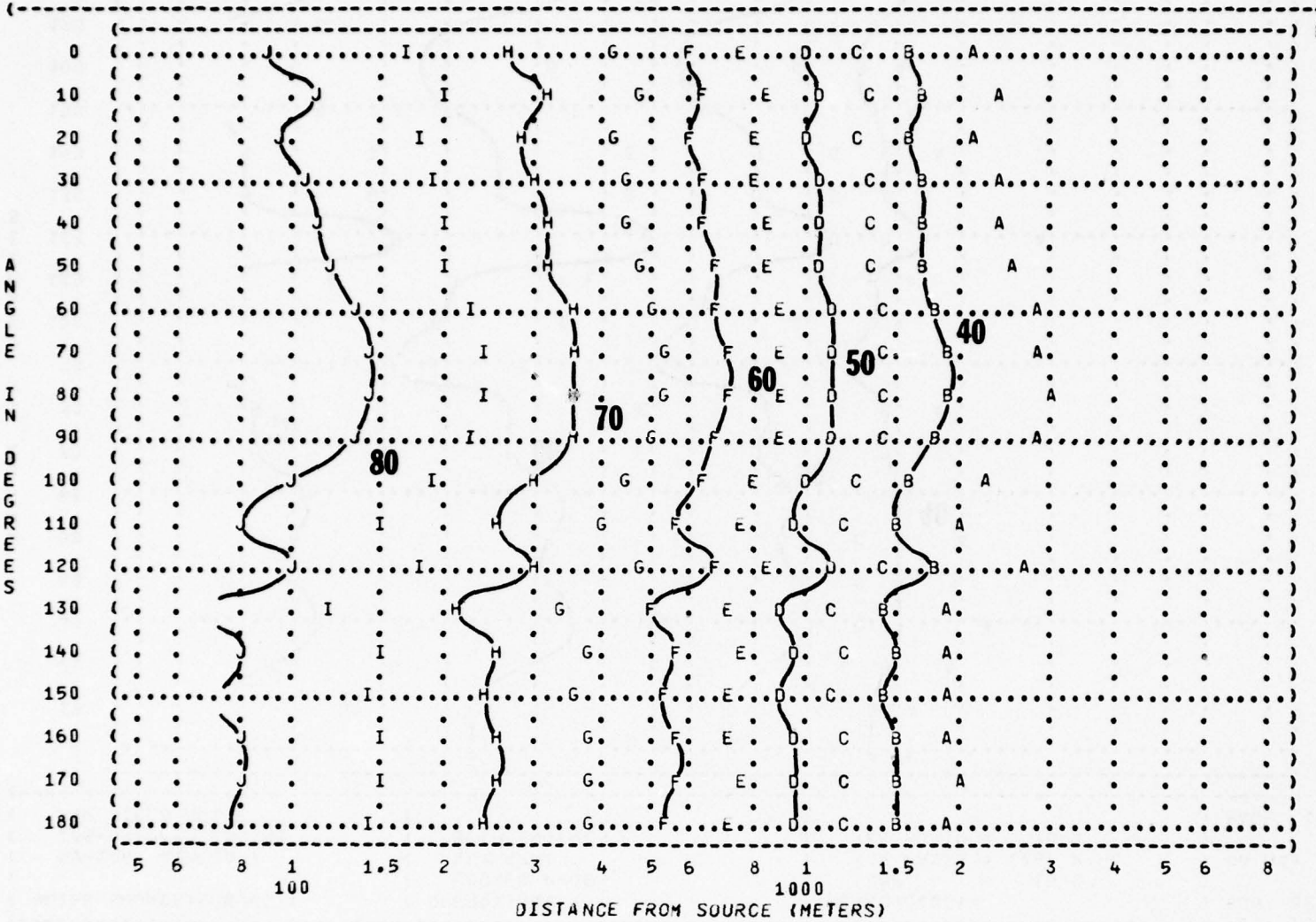


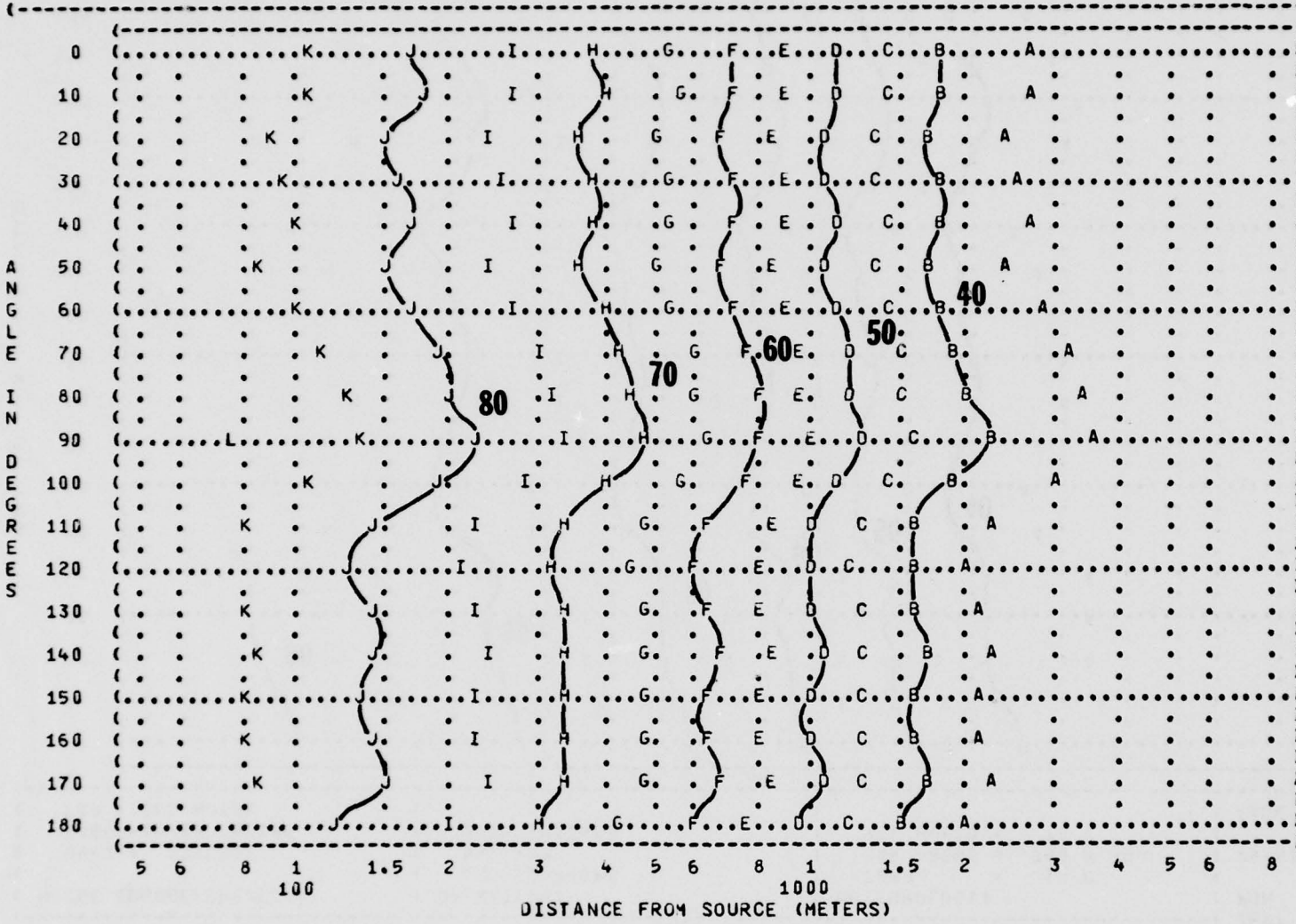
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 20




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 21

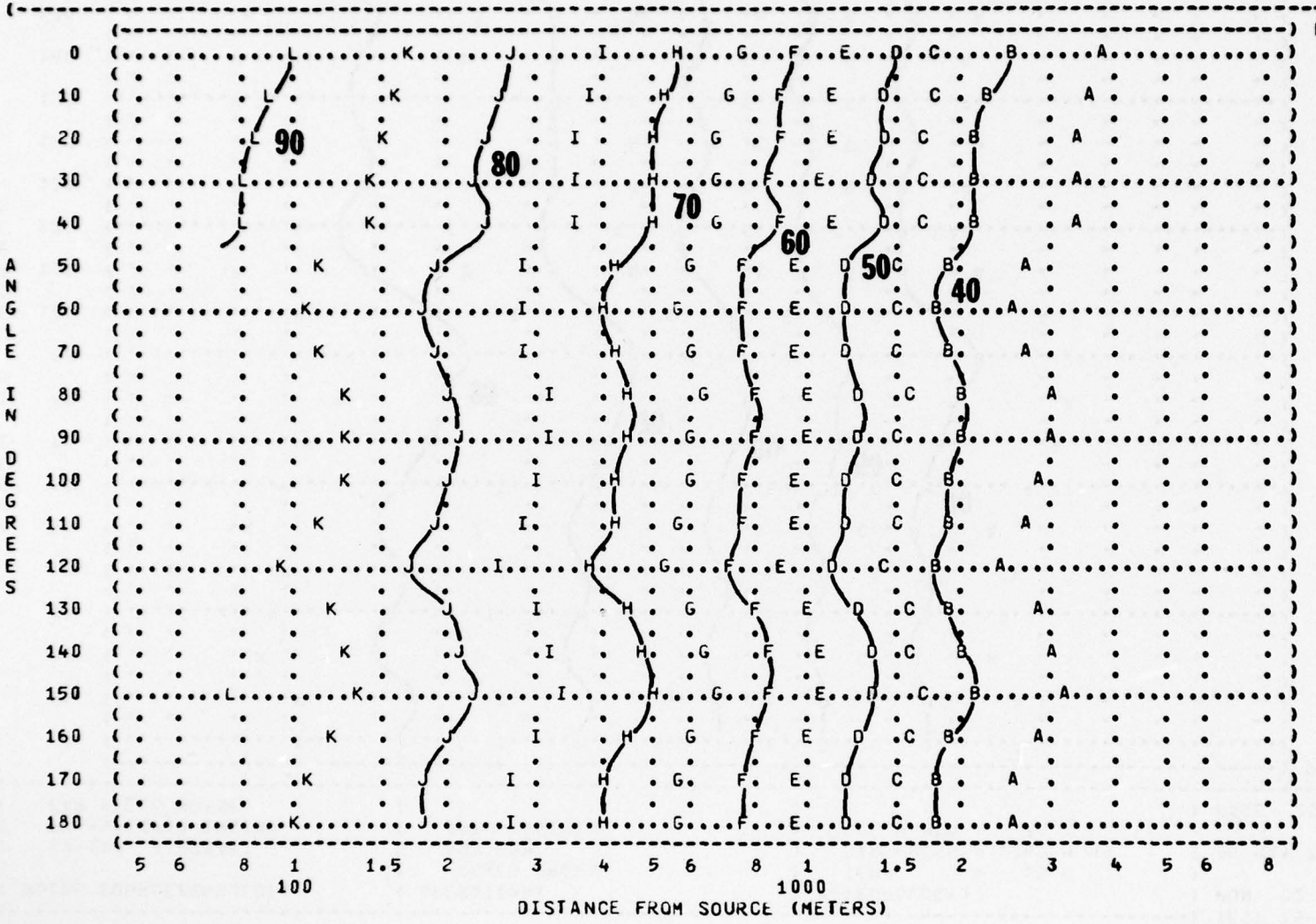


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 22

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

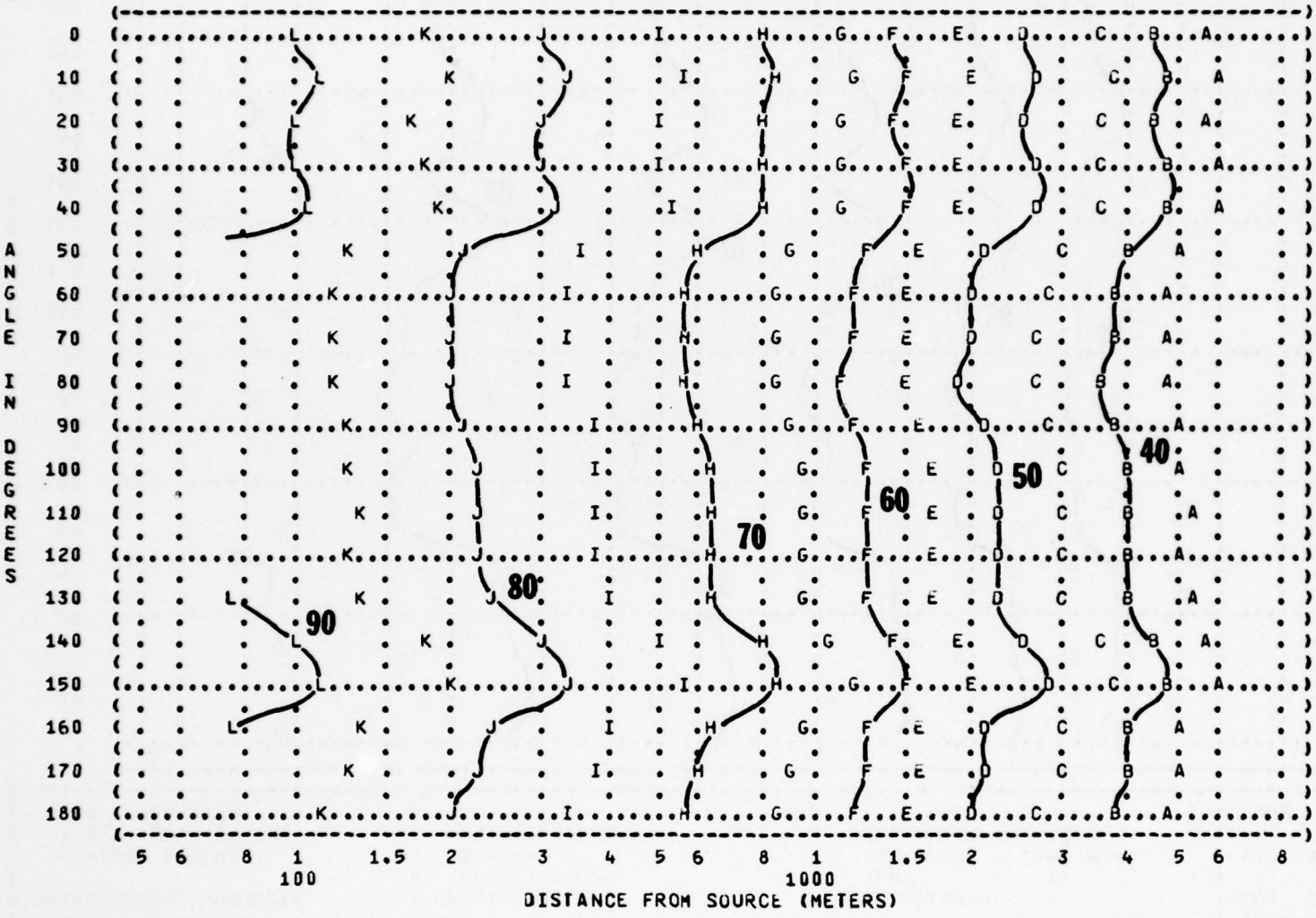


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 23

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

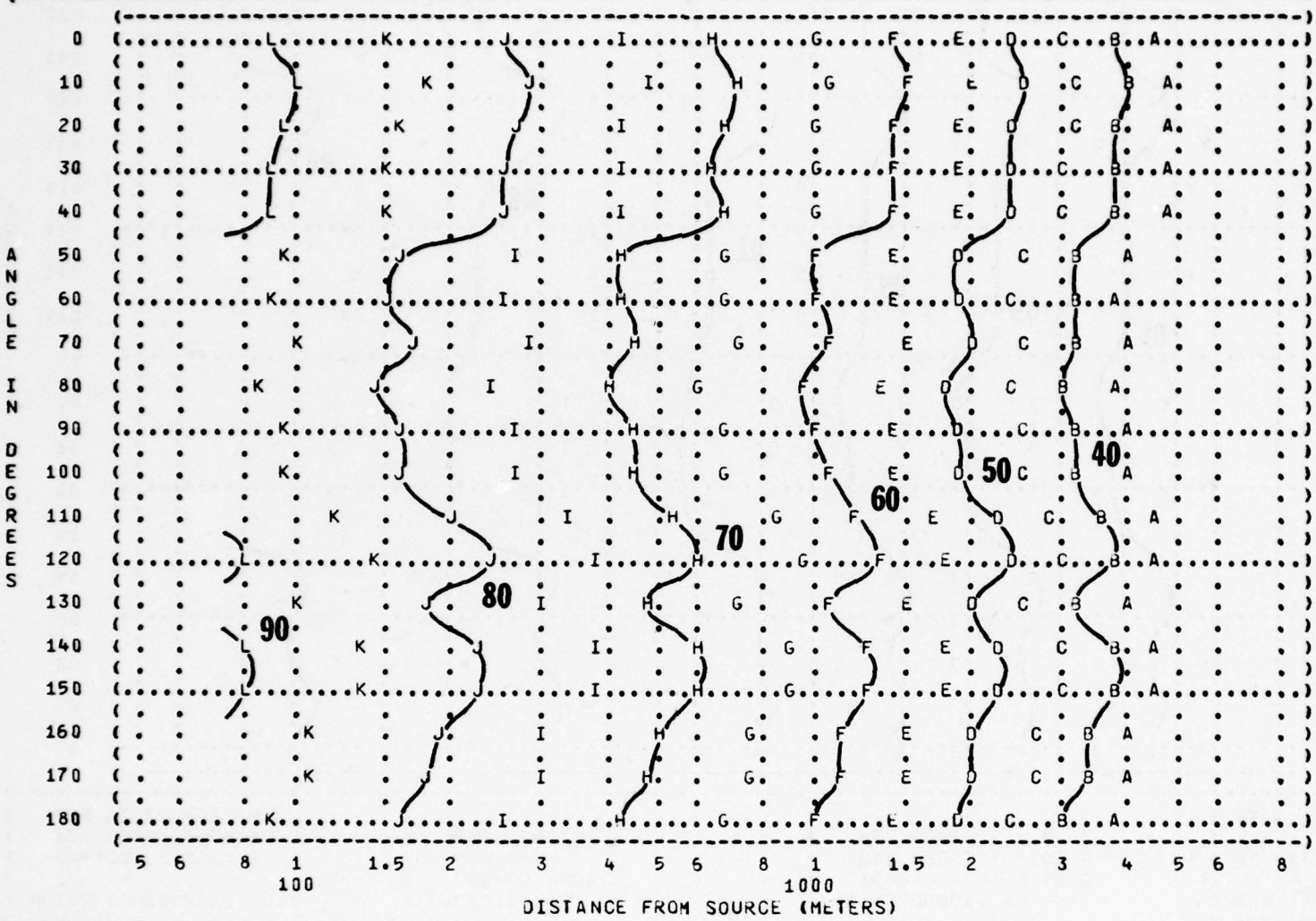


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
ONEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 24

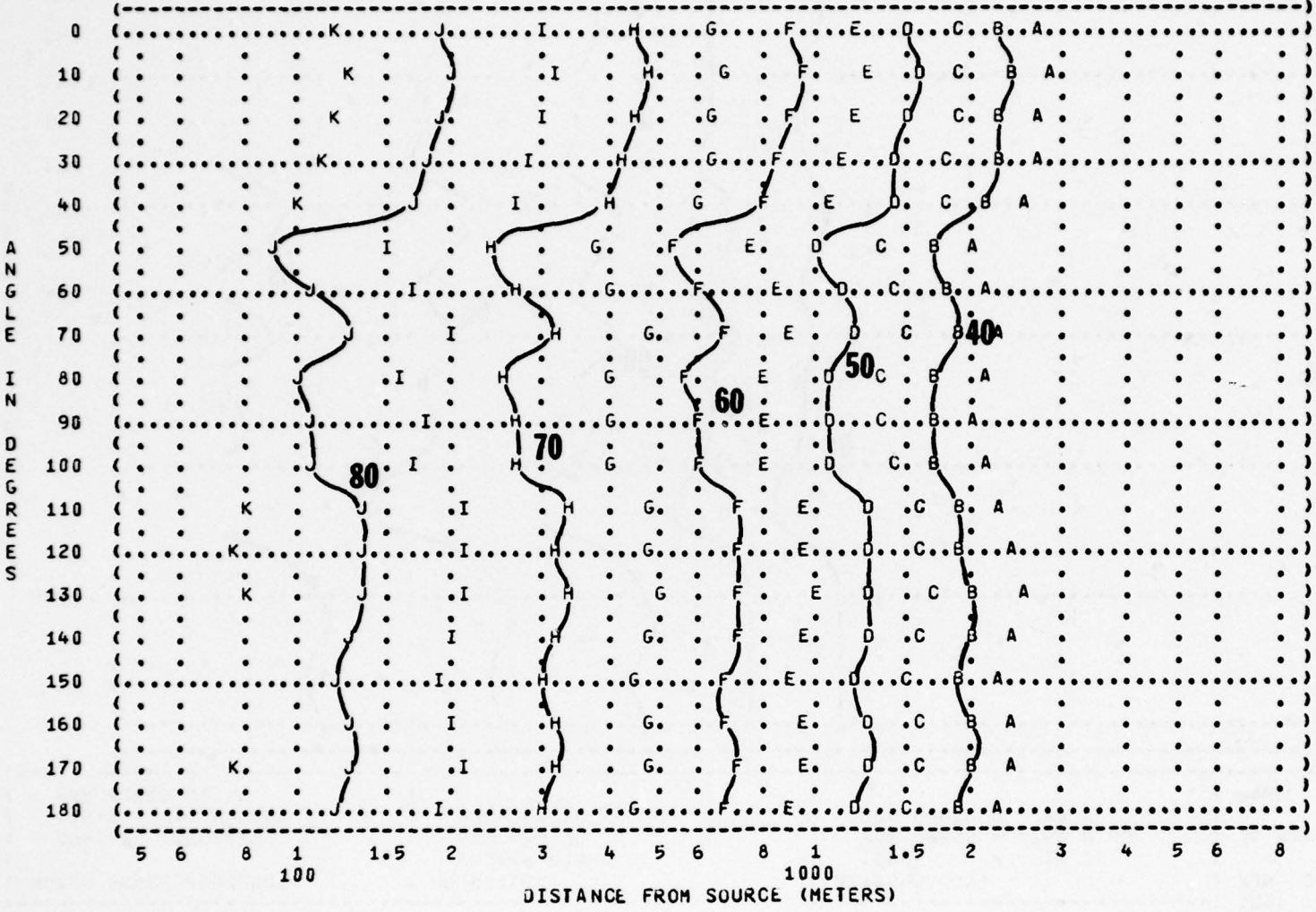


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 25

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

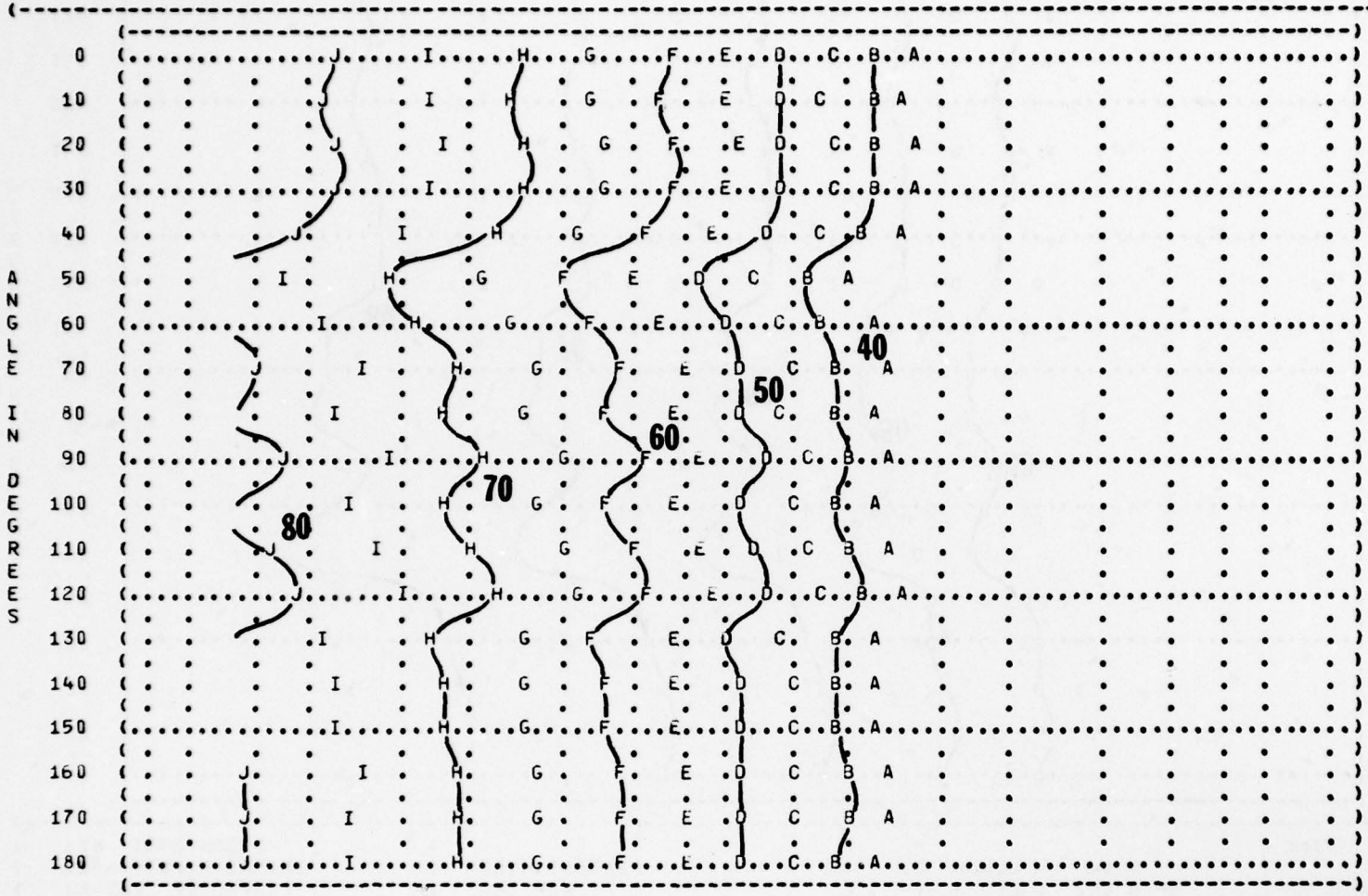


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
LOCKED PROPS
89% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 02
08 MAY 75
PAGE 26

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |

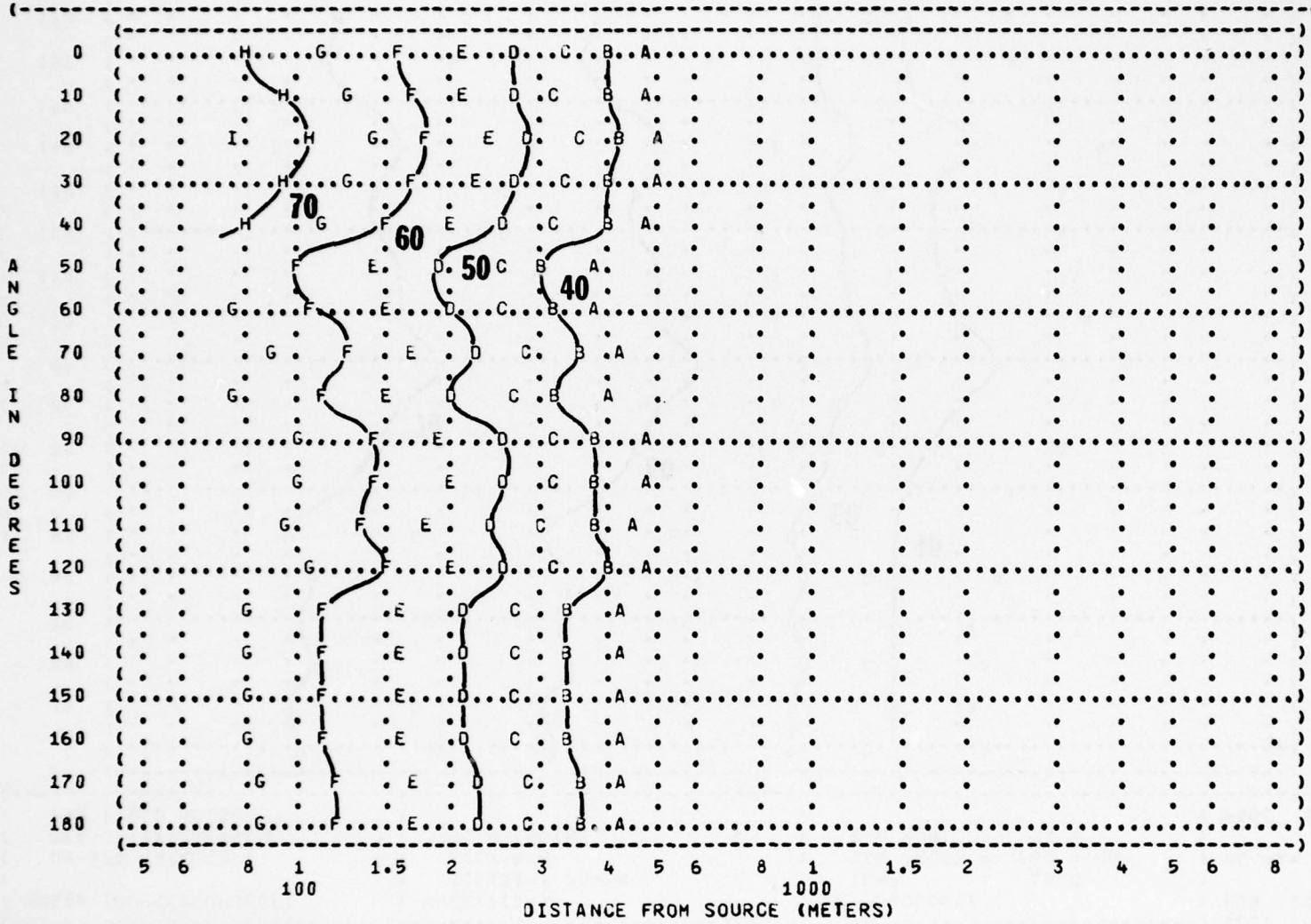


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 18

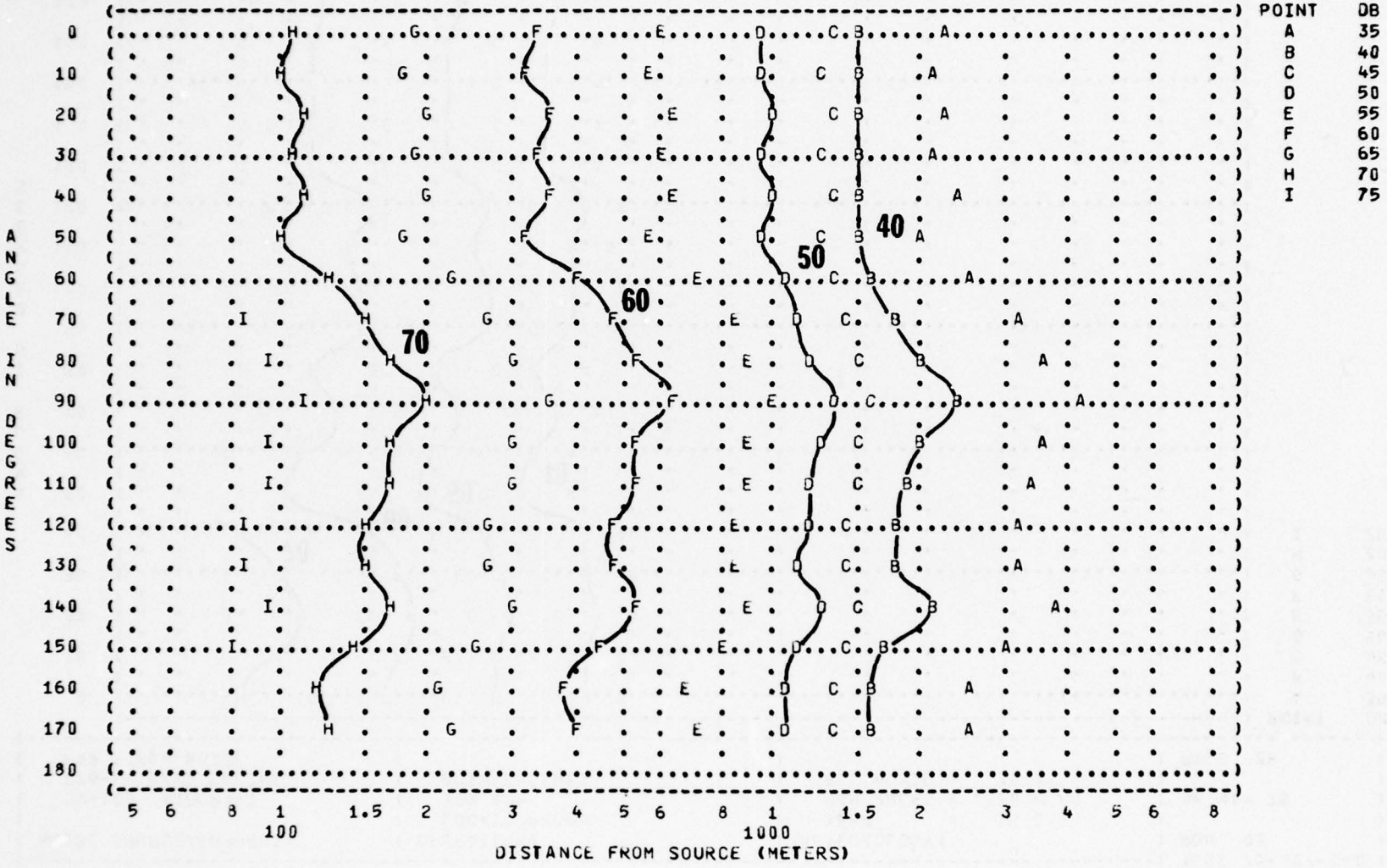


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 19

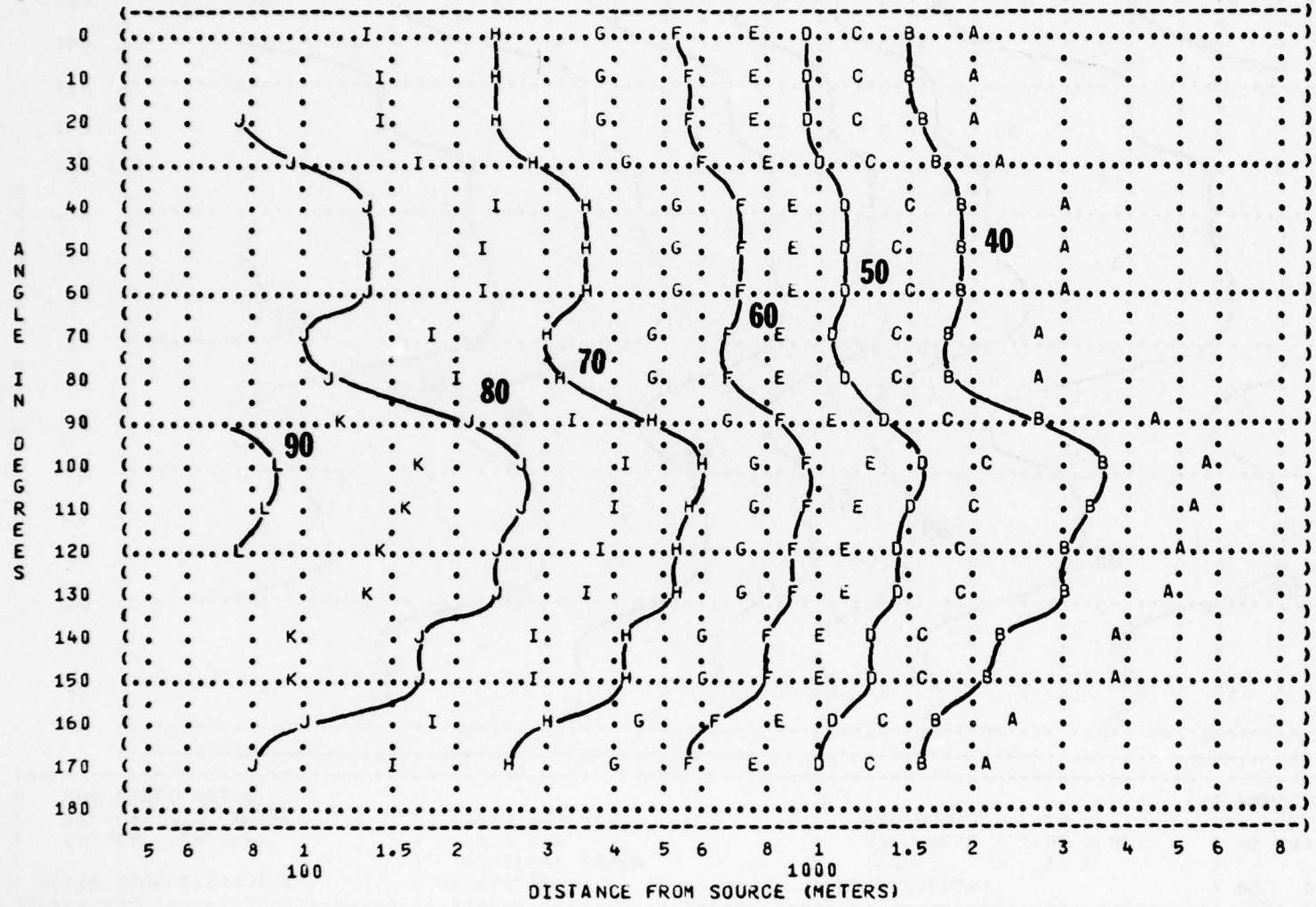


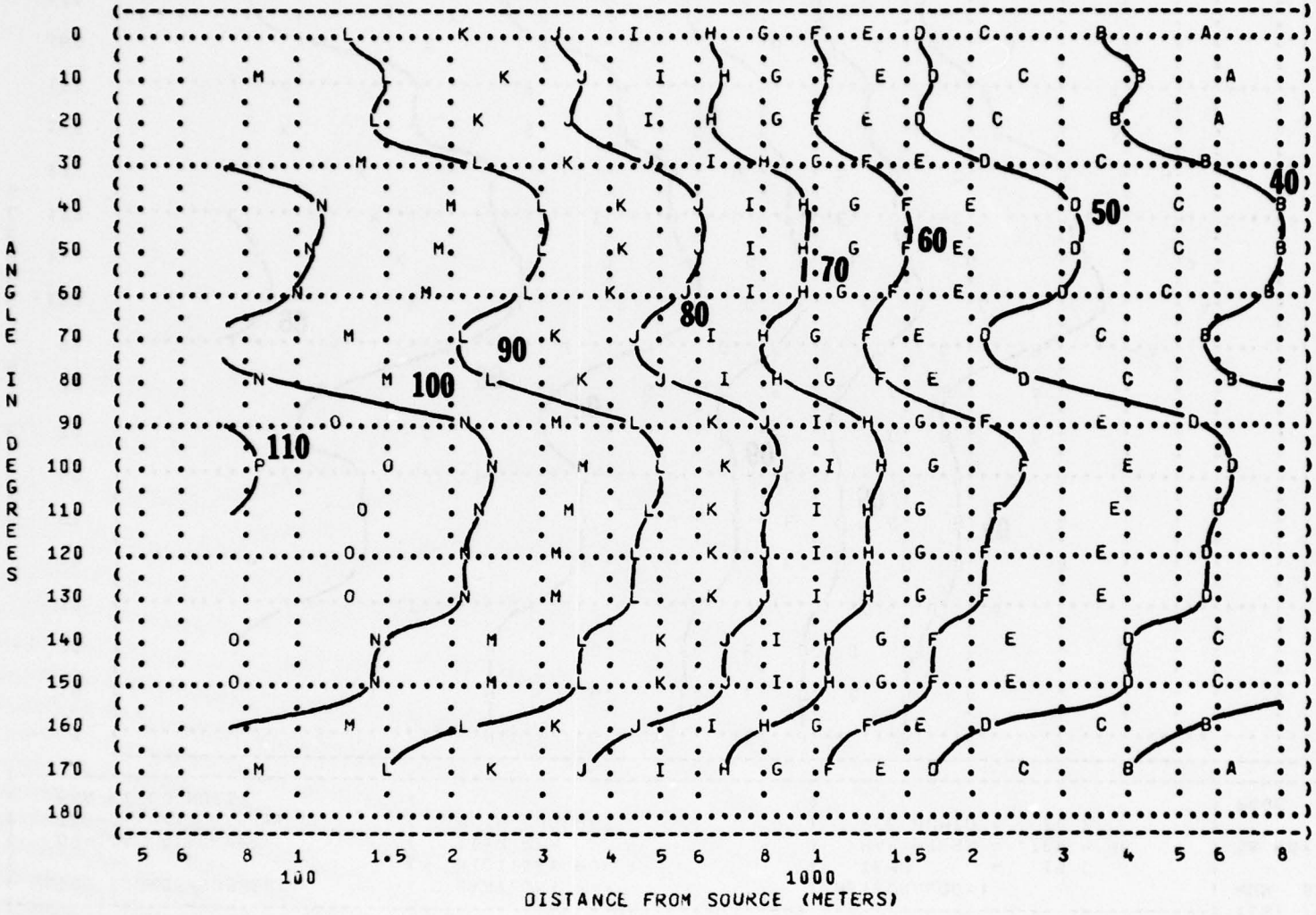
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 20




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |
| O | 105 |
| P | 110 |

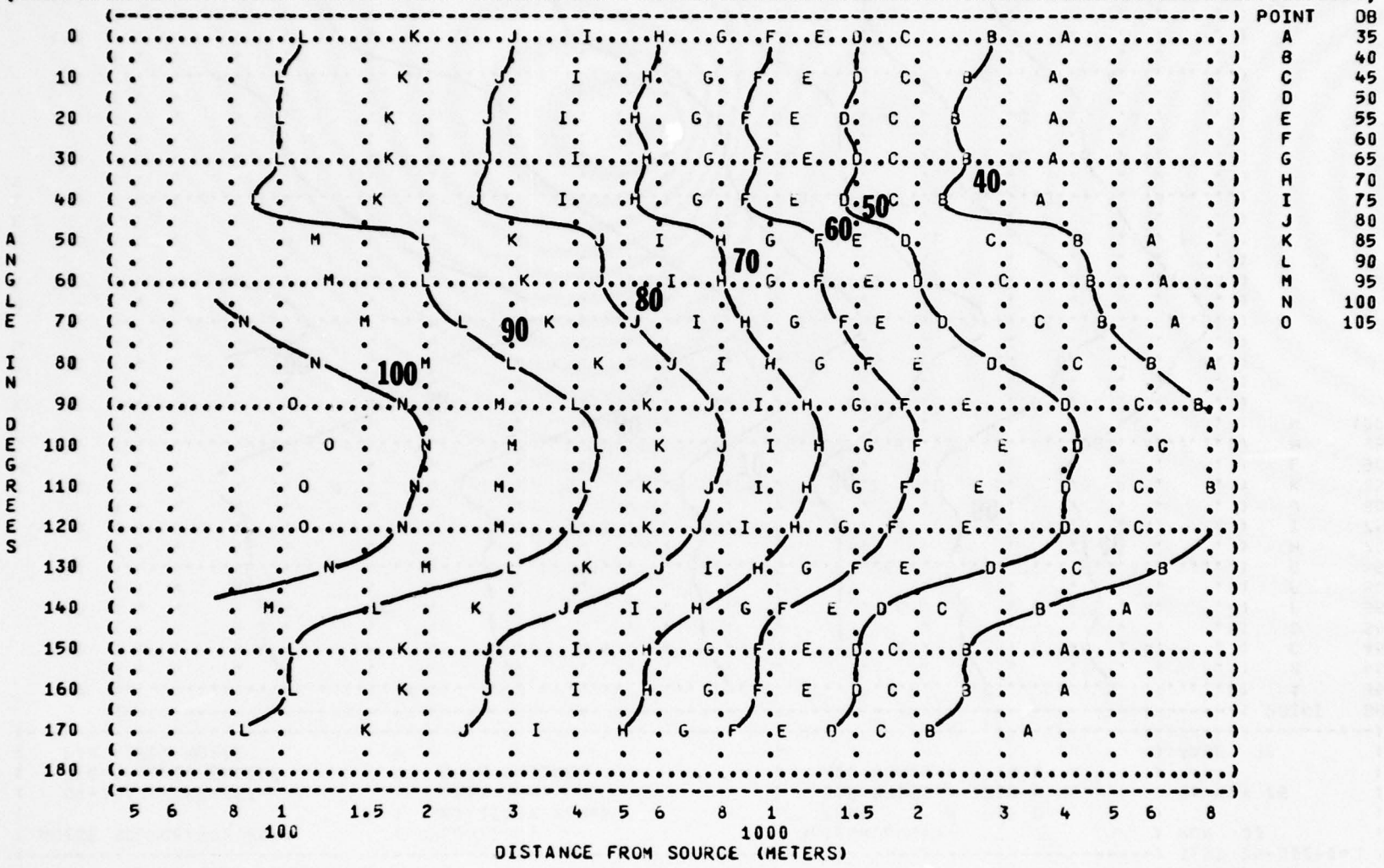
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 21

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |
| O | 105 |

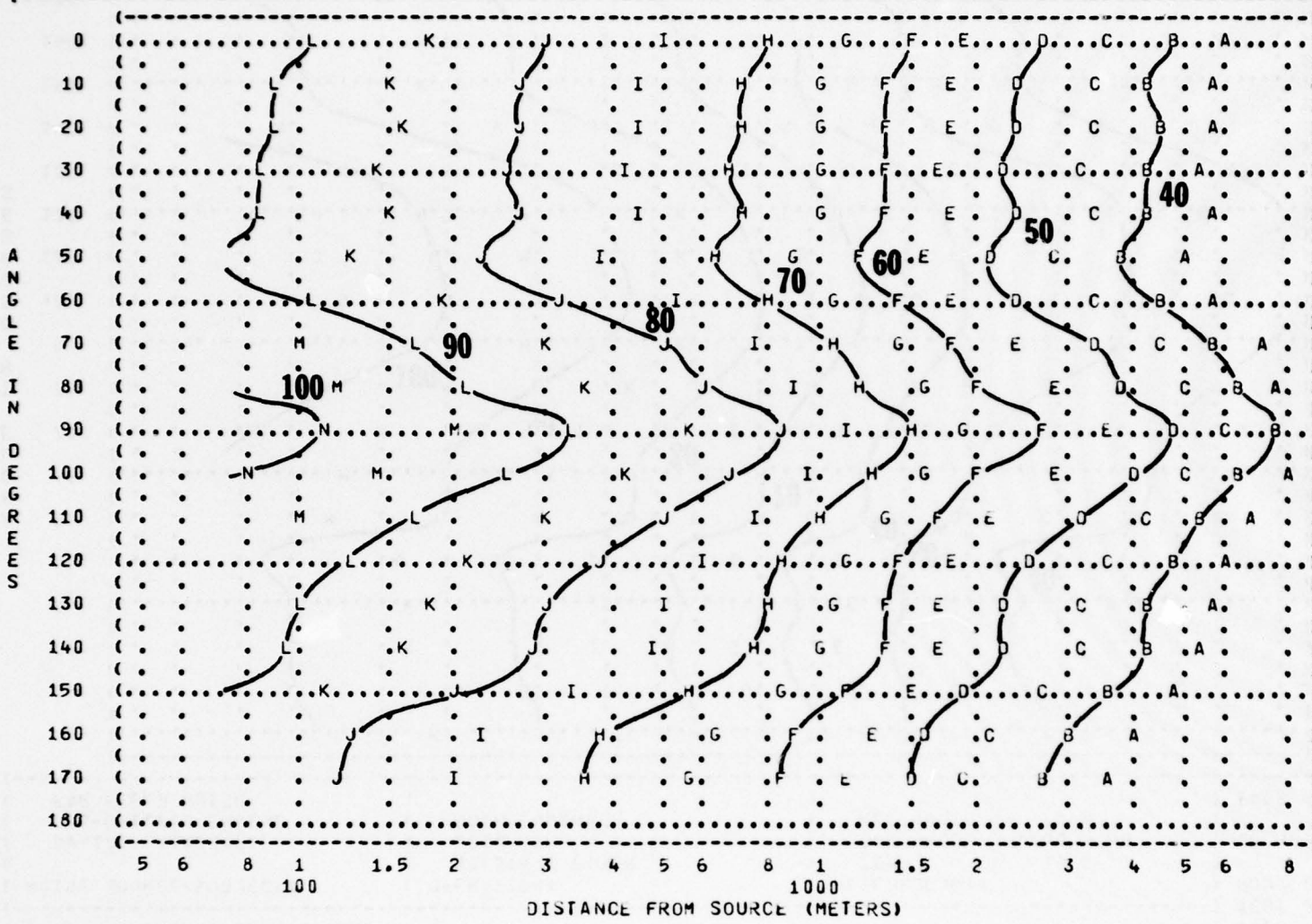
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-040 RUN 03 08 MAY 75 PAGE 22

NOISE SOURCE/SUBJECT: OV-10A AIRCRAFT; T76-G-10/12 ENGINE; FAR FIELD NOISE

OPERATION: MILITARY POWER; 101% RPM; BOTH ENGINES

METEOROLOGY: TEMP = 15 C; BAR PRESS = .760 M HG; REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |
| M | 95 |
| N | 100 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03

08 MAY 75

PAGE 23

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

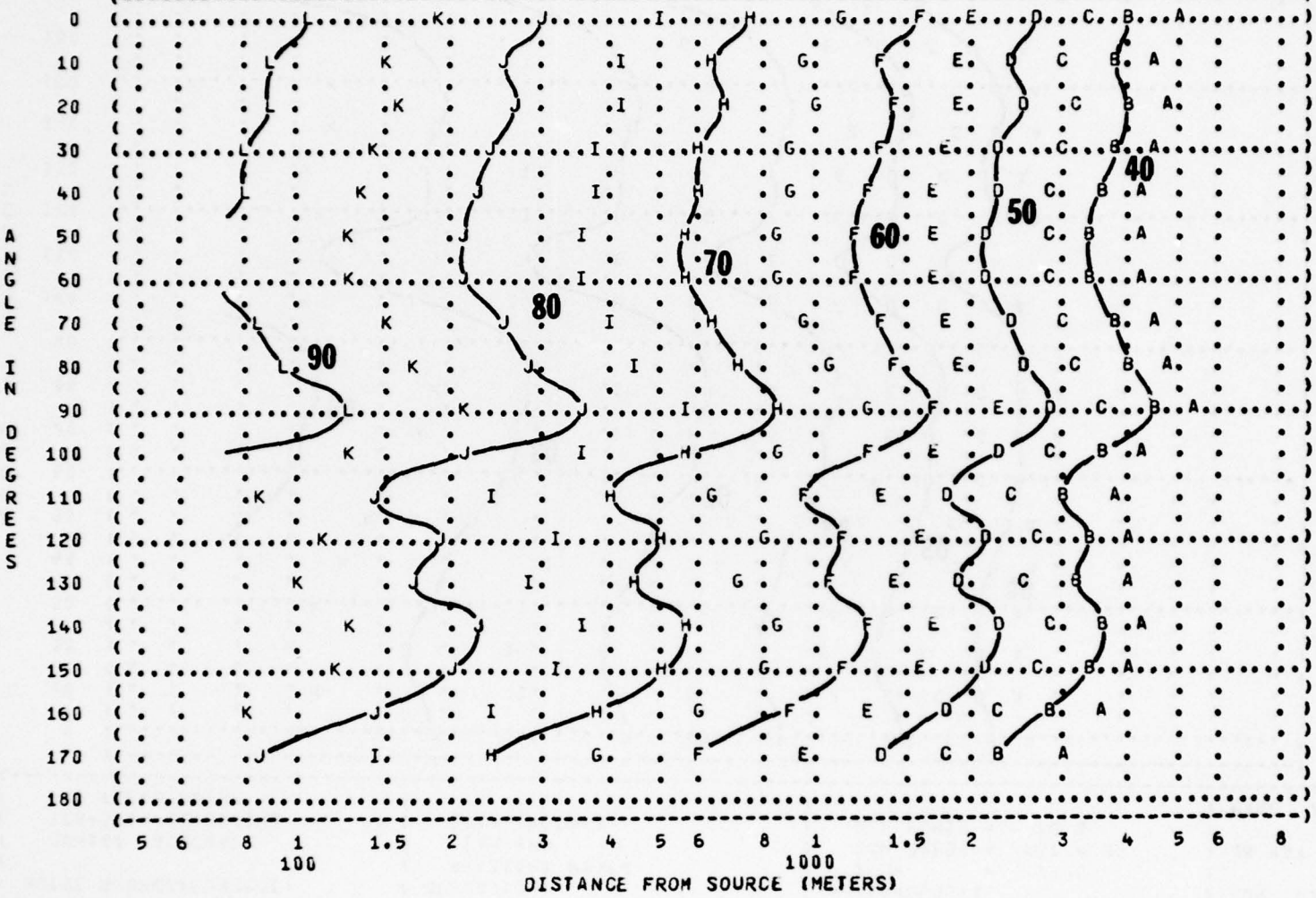


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 24

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

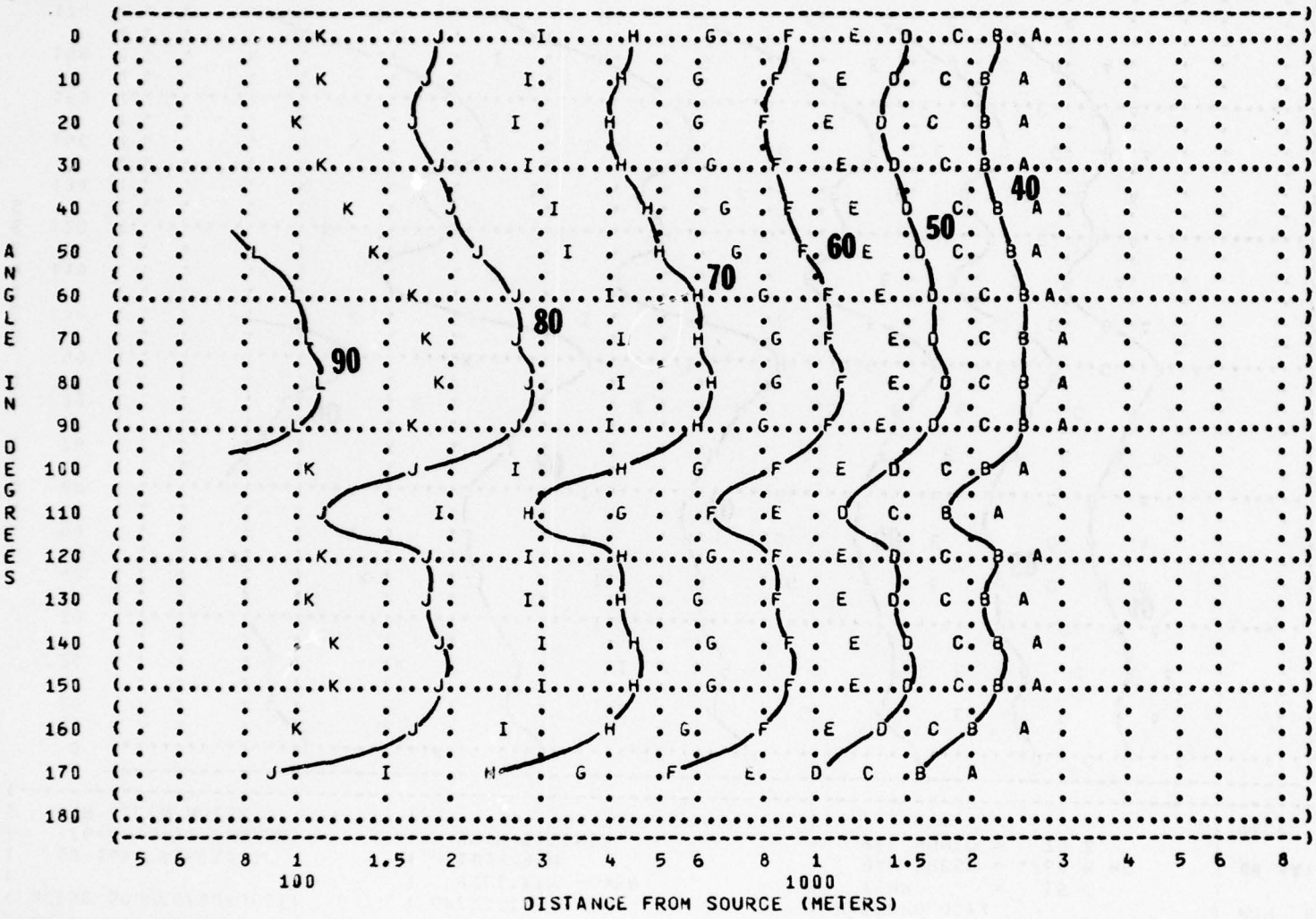


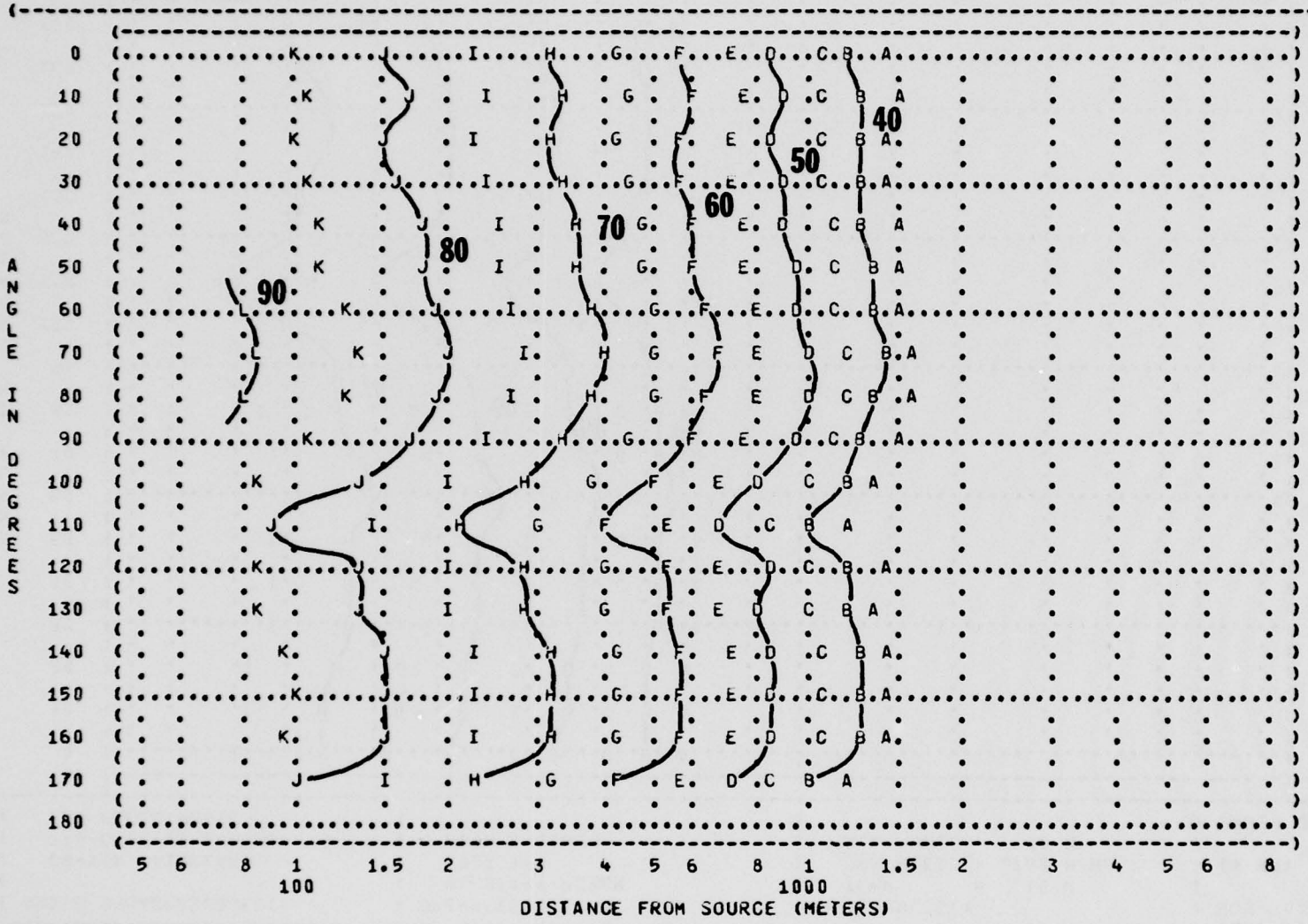
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 25




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

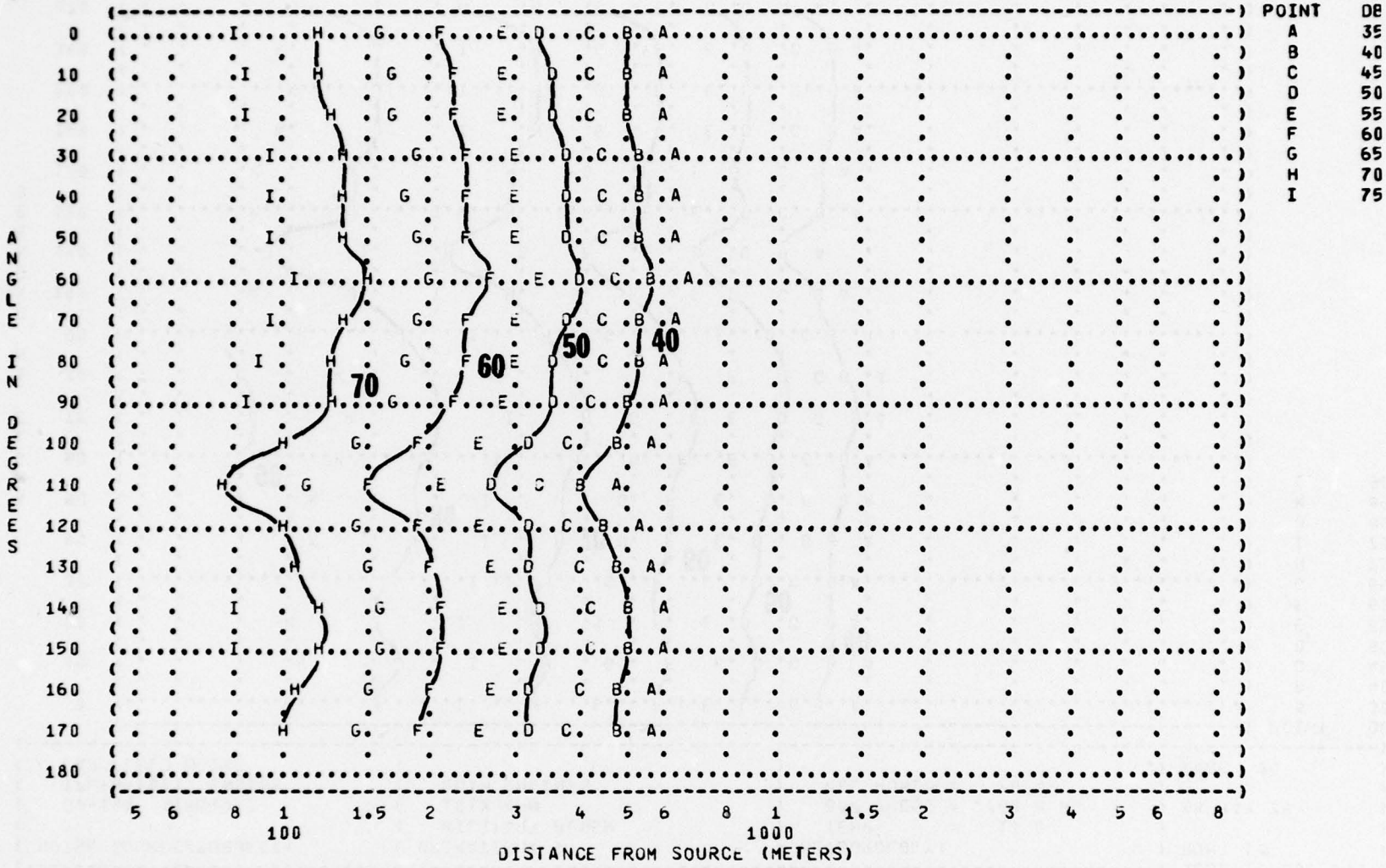
NOISE SOURCE/SUBJECT:
OV-10A AIRCRAFT
T76-G-10/12 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
101% RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-040
RUN 03
08 MAY 75
PAGE 26

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |






*U.S.Government Printing Office: 1977 — 757-080/230